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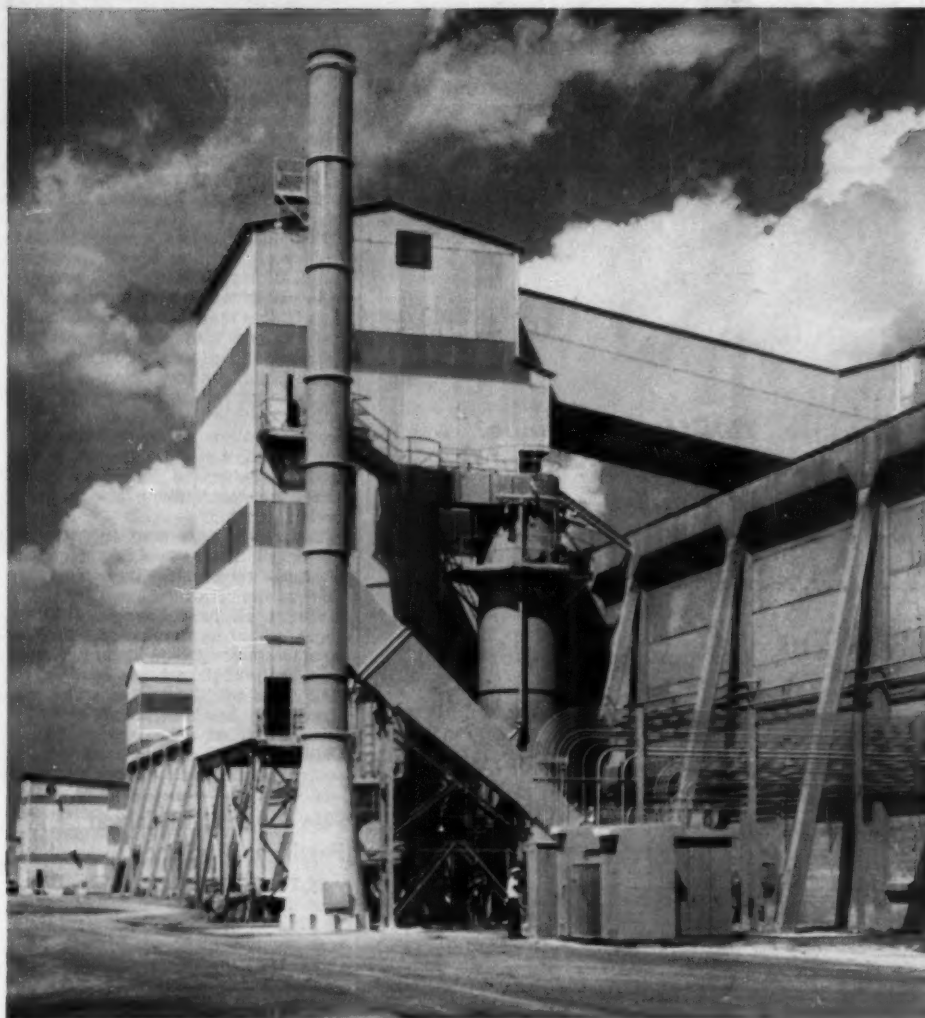


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No. 36



CUTS AIR POLLUTION—This structure represents an investment of more than \$500,000 to reduce fluorine emission from American Cyanamid Co.'s triple superphosphate curing building at Brewster, Fla. As result of installation, Cyanamid says less than 15 one-hundredths of one percent of fluorine entering triple superphosphate plant will escape to atmosphere. Cylindrical structures in the foreground are scrubbers which capture gaseous fluorides drawn off triple superphosphate by equipment inside the building. (Story page 28.)

Maintenance of Gears and Drives in Plant Complicated by Corrosion and Extra Wear

GOOD ECONOMICS go hand in hand with adequate maintenance schedules on equipment in the plant. In a dusty, corrosive environment where fertilizer plant machinery is operated, maintenance takes on an added dimension. Wear and tear is stepped up and the necessity of taking extra care is evident.

What constitutes good maintenance? One initial step is organizing a schedule of inspection as well as one of maintenance operations. Adequate forms and records should be kept so that everyone responsible for this phase of plant keeping will know what should be done.

Maintenance of gears and gear drives on plant equipment is one of the important areas where trouble may be prevented. Maintenance begins with a unit that has been properly selected, well anchored, properly supported and properly aligned. A quick check should be made every day to see

if any abnormal noises are present and to see if oil is leaking. If either of these conditions exists, the unit should be stopped until the causes have been discovered and corrected.

At least once a month the unit should be thoroughly cleaned outside to permit necessary escape of heat. All anchor bolts, supports, and couplings should also be checked monthly.

After the initial "run-in," gear tooth surfaces should be checked quarterly. If the gear was properly installed, lubricated and mated, the teeth should acquire a high polish during the early operating period. If this polish does not appear it is likely that something has gone wrong in the unit.

Abrasive wear shows up as very fine lines on

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Niagara Chemical Plans New Pesticide Formulation Unit at Louisiana Site

OPELOUSAS, LA.—A new plant for production of agricultural pesticide formulations will be built at Opelousas, La., by the Niagara Chemical Division of Food Machinery and Chemical Corp. This was announced by Stuart Bear, manager of the division.

The new unit will be designed to meet the pesticide needs of Southern and Central Louisiana. According to Mr. Bear it will turn out a wide range of materials for control of pests which each year cause serious economic loss to area growers.

Among the products to be produced by the plant are formulations of DDT, Endrin, Methyl parathion, Malathion, Heptachlor, ethion, Thiodan* insecticide and Tedion* miticide.

*Registered trademark.

These will find application in curbing commonly occurring pests such as cane borer on sugar cane; potato weevil on sweet potatoes; stinkbug and leafhopper on rice; boll weevil, boll worm, aphid, thrip and flea hopper on cotton. Production of insecticides for control of the imported fire ant also is planned.

The plant—a steel structure with concrete foundation—will contain more than 16,000 square feet of production, warehouse and office space. It will incorporate the most modern equipment for the blending and mixing of liquid, dust, and granular formulations. Liquid production facilities will be installed outdoors.

John Camara, currently serving as office manager at Niagara's Greenville, Miss., plant, has been appointed

to serve as plant manager when the Opelousas facilities are completed. This will be sometime around mid-February, 1961.

Convenient to rail and highway transportation, the new production unit will provide faster service to Niagara's customers in both Southern and Central Louisiana. Currently these growers are being served by the firm's Greenville facilities. Furthermore, it will now be possible to meet demands for specific materials which may arise from sudden localized pest infestations.

The Opelousas operation will represent Niagara's second production venture in Louisiana. The firm's technical chemicals department currently operates a unit at Belle Chasse. In all, Niagara operates some 16 plants in the U.S. and two each in Canada and Mexico. Headquarters are located at Middleport, New York, where the company also has major research facilities.

Pesticide Sales Up In 1960 But Profit Margin Stays Small

WASHINGTON—Profit margins in the pesticide field have been narrowing of late years, but the sales curve has been on the upgrade, according to information just released by the National Agricultural Chemicals Assn. Production of pesticidal chemicals in 1960 averaged about 3% over that of 1959, the NAC said, totaling an estimated \$285 million at the basic manufacturers' level.

In reviewing the pesticide business for 1960, the association reported that sales of various products of the industry experienced many fluctuations, with use of pesticides being adjusted to uncontrolled factors such as the severity of pest infestations and the vagaries of weather. While insecticide sales were off somewhat in 1960, fungicide and herbicide sales were up.

Herbicides, particularly, showed a healthy increase of 7% over the 1959 figures.

Elaborating upon its assertion that profit margins have been narrowing, the NAC report says this trend affects pesticides makers more acutely than it does most industries. "Besides cost increases for labor, materials and distribution, agricultural chemical firms faced sharply rising expenses for research and development.

"Not only is the discovery of new products becoming more expensive, but expenditures are also rising for product testing to meet the ever-increasing requirements for government approvals."

The report adds that the amount and detail of research data required to obtain government approvals have been on the rise, too.

"From all indications in 1960, it appears that research and development costs for the industry will not go down in 1961, and may continue to rise. As is well known, the wider use of pesticide has been accompanied by demands from non-scientific public bodies for additional research on industry products," the report observes.

Fire Sweeps Michigan Fertilizer Facility

PLYMOUTH, MICH.—The Plymouth Fertilizer Co. here was swept by fire in its main manufacturing building the night of Dec. 3. Fire Chief Harry Phillips estimated the loss at a minimum of \$50,000. The blaze, origin of which is not known, was out of control when firemen arrived. The plant is a mile east of Plymouth.

The last work shift of the week had left the plant two hours before neighbors saw the flames and called the fire department.

Fatal Accident in Florida Fertilizer Plant

FORT LAUDERDALE, FLA.—Willie Canby, an employee of the Willson & Toomer Fertilizer Co. at Port Everglades, was killed Dec. 7 when 100 tons of fertilizer buried him at the company warehouse.

E. B. Gibbs, manager, said the victim was working on a mechanical loader when a retaining board on a bin broke and poured the fertilizer over him and his machine.

To New Position With Tennessee Corporation

EAST POINT, GA.—J. T. Parkerson, Jr., has been appointed assistant general manager of the East Point Division of Tennessee Corporation, according to an announcement by E. T. Spidle, general manager.

Mr. Parkerson will succeed W. A. Jackson, sales manager, who is retiring after 31 years of service with the company.



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How to Control or Prevent Fires in Ammonium Nitrate Storage Facilities

DO YOU KNOW how to control an ammonium nitrate fire? This is an appropriate question to put to fertilizer manufacturers, and in many cases it might also be an embarrassing query since some may have only a hazy idea of what should be done.

Some helpful tips on the subject have been prepared by Chester I. Babcock, manager of the National Fire Protection Assn. fire record department.

Here are his suggestions:

1. Apply water immediately and in as much volume as possible. Two-and-one-half-inch hose with a minimum 1½-inch tip capable of producing a 250 GPM stream with adequate pressure to supply a good range is recommended. The superior cooling effects of water spray, preferable for most fires, are not desired here, as fires in ammonium nitrate should be flooded. Bring as many hose streams of major size to bear on the fire as the capacity and pressure of the water supply permits.

2. Do not hesitate to apply water directly to the containers of the ammonium nitrate, inasmuch as instantaneous cooling is the desired objective.

3. Irrespective of the normal reaction of ventilation increasing the severity of a fire, it is recommended that barriers such as doors and windows of storage spaces be opened to provide as much ventilation as possible. Dissipation of gases of decomposition will reduce the possibility of pressure being built up and enhance the effectiveness of fire-fighting operations. It should be remembered that high temperature and pressure are factors to be avoided.

4. Care should be taken to prevent molten ammonium nitrate from entering floor drains and sewers. It is conceivable that such piping could provide the confinement necessary for build-up of pressure necessary to initiate an explosion.

5. Vapors from burning ammonium nitrate are extremely toxic. In this respect, the decomposition products of fertilizer-grade ammonium nitrate, do not differ from those of other nitrates. Self-contained respiratory protective equipment should be used in locating a fire or ventilating a building charged with these toxic gases. Oxides of nitrogen and carbon monoxide are the most dangerous of the gases likely to be encountered in such a fire.

6. If sufficient heat is present, it may happen that during the application of water, formation of steam in pockets in the piles of nitrate may cause eruptions with force comparable to minor explosions. For this reason it is judicious not to approach too closely to the fire and not to become too alarmed at such steam eruptions. The fire fighter should protect himself by guiding the water from behind the shelter of the wall of the warehouse, at the corner of doorways, immediately below the sash of the windows or from behind any substantial barrier.

The foregoing is not to be interpreted as superseding "on the spot" judgment. The quicker the temperature is lowered, the less likelihood there will be of steam eruptions and the generation of oxides of nitrogen. Rapid reduction of temperature is the essence of the entire control operation.

In connection with information on how to handle ammonium nitrate fires once they are started, is the matter of how to store bags of the material to avoid fire and other hazards. Here are some suggestions made by the

Manufacturing Chemists Assn.:

1. Bags of ammonium nitrate fertilizer should be stored not less than 30 inches from the storage building walls in piles not more than 12 feet in width, with 30-inch aisles between piles. Bags should not be stored closer than 36 inches from the eaves of the roof or supporting and spreader beams overhead.

2. Roofs and floors above masonry or concrete walls should be of lightweight construction and should not be of concrete or masonry. Wooden structures are authorized.

3. Ammonium nitrate fertilizer should not be stored in any structure in which any explosives are kept.

4. Warehouses or structures used for storage purposes should be clean and be maintained in good housekeeping order.

5. Ammonium nitrate fertilizer should not be stored over or under any organic chemicals, flammable liquids, corrosive acids, chlorates, permanganates and the like, finely divided metals, sulfur, or combustible material other than dunnage. Storage piles should be at least 30 feet away from these materials.

6. The material should not be stored closer than three feet from steam or hot water pipes, radiators, heating devices, or electric wiring, fittings or switches.

7. Ammonium nitrate fertilizer may be stored on clean concrete floors or wooden pallets or dunnage on any type of clean floor. Floor drains into which molten nitrate can run during a fire should be eliminated or plugged.

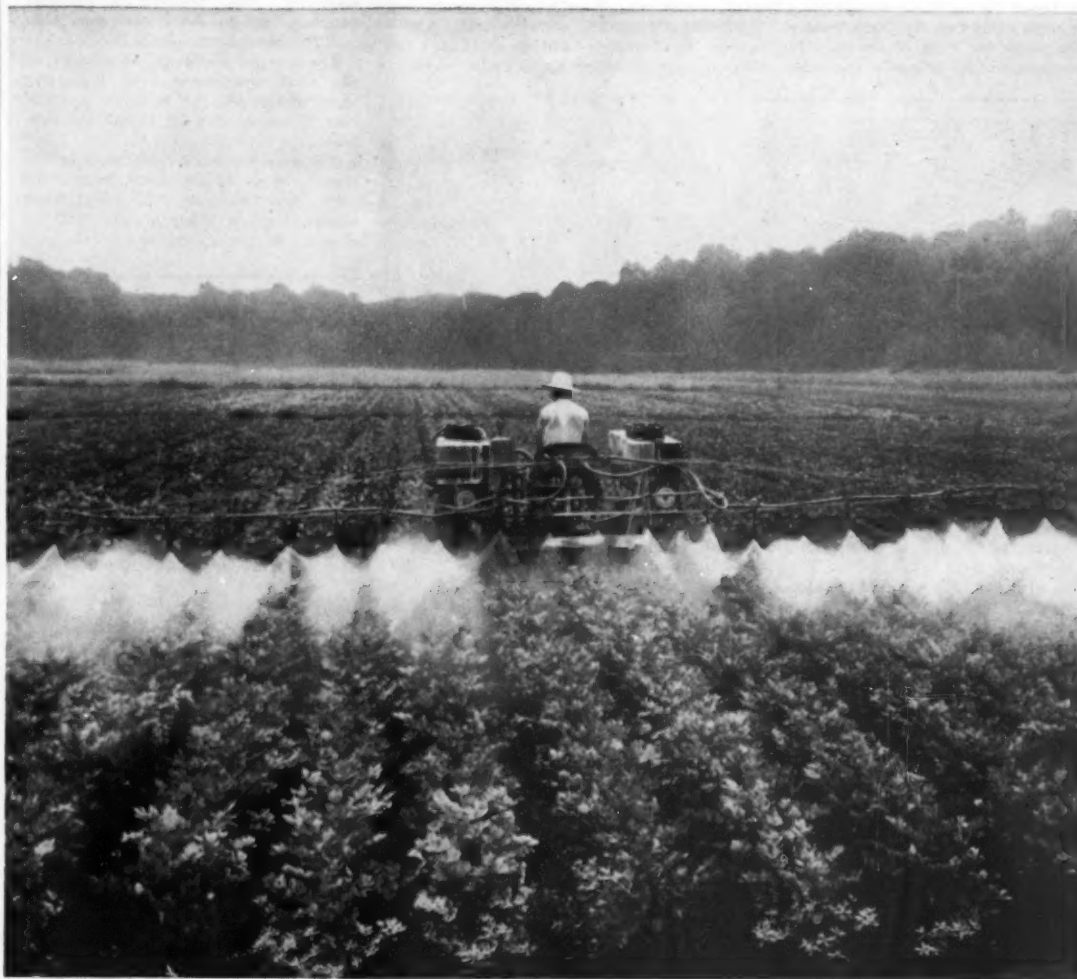
8. Spilled material should be cleaned up promptly and disposed of. A broken or cracked bag containing uncontaminated fertilizer may be salvaged by placing it inside a clean new over-slip bag and closing securely.

9. Except at fertilizer manufacturing plants, ammonium nitrate fertilizer should be stored only in containers.

10. Smoking should not be permitted in or near storage spaces.

11. Open lights or flames should be prohibited in or near storage spaces.

12. Fire hydrants, exterior of the storage spaces and conveniently placed, with adequate hose available and capable of extension to all parts of the storage, should be provided.



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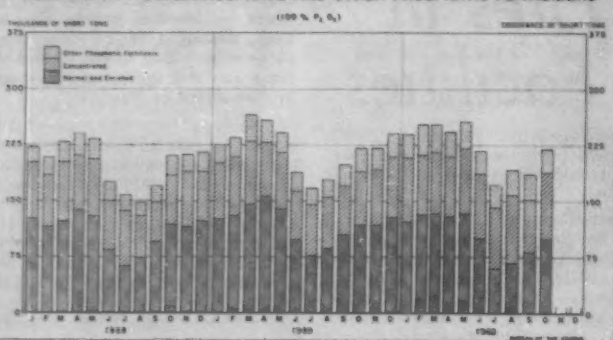
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PRODUCTION OF SUPERPHOSPHATE AND OTHER PHOSPHATIC FERTILIZERS



INCREASED SUPER PRODUCTION—Production of superphosphate and other phosphatic fertilizers in the U.S. was greater in October, 1960, than during the corresponding period of the previous year, according to a report just issued by the U.S. Department of Commerce, bureau of the census. The report, as seen in the comparative chart above, indicated that U.S. output of superphosphate and other phosphatic fertilizers during October, 1960, amounted to 219,662 short tons (100% P₂O₅), compared with October, 1959, output of 218,808 short tons. Shipments of superphosphate and other phosphatic fertilizers during the month totaled 157,186 short tons, or 7% above the volume shipped during the corresponding month of last year. Stocks held by producing plants as of Oct. 31, 1960, totaled 371,968 short tons, 3% more than those held on Sept. 30, 1960. These monthly figures (including percentage changes) are unadjusted for seasonal variation and number of working days, USDC says.



CFA BOARD—The California Fertilizer Assn. named its board of directors at the group's 37th annual convention at Coronado, Cal., Nov. 13-15. In the photo are, left to right: L. M. Roberts, Shell Chemical Co., San Francisco, treasurer; L. R. Hamilton, California Chemical Co., Ortho Division, Richmond; W. M. Cline, American Potash & Chemical Corp., Los Angeles; J. N. Williams, General Fertilizer & Supply Co., Chula Vista, vice president; James F. Sloan, J. F. Sloan Co., Salinas, president; James Bonaventura, AFC, Inc., Edison; D. W. Galbraith, Agriform Chemical Co., Inc., Woodland, immediate past president; C. E. McFaddin, Imperial NH Service Co., El Centro, secretary; Howard H. Hawkins, Golden State Plant Food Co., Glendora; Sidney H. Bierly, California Fertilizer Assn., gen. mgr., Sacramento. Not in picture—L. M. Duckworth, Niagara Chemical Div., Food Machinery Corp., Fresno; Sam Mooschekian, Downey Fertilizer Co., Downey, and John Taylor, John Taylor Fertilizers, Sacramento.

PHOSPHATE RETURNS BACK INTO GOOD EARTH

PONTIAC, ILL.—The terms "Gravity flows" of fertilizer; "dumping" of materials; "going in the hole"; and "inventory shrinkage" took on new meanings for the Steve Turner Plant Food Co. here recently when nearly 100 tons of stored phosphate rock were swallowed up by collapse of a half-century-old mine shaft over which the storage facility had been built. An estimated two or three carloads of phosphate rock went tumbling down a 420-ft. shaft when the concrete flooring broke through without warning, affording a nearby workman the thrill of a lifetime.

Company spokesmen said that the shaft, used 40 to 50 years ago when coal mining was an important part of the community's economy, had been filled up years ago, but apparently had washed out far below the earth's surface and allowed the fill to drop suddenly, thus creating a vacuum which pulled down the concrete floor and the stored phosphate.

There is no possibility of salvage of the rock, spokesmen said, since the shaft was nearly full of water and the rock is submerged far below the surface.

The lone workman, occupied in the storage area at the time, is said to have been but four or five feet from the gaping hole when it appeared. He didn't stay there long, however.

Cooperative Purchases Mississippi Plant

HATTIESBURG, MISS.—Ernest Spivy, general manager of Mississippi Federated Cooperatives, has announced the cooperative has purchased the Meridian Fertilizer Co. plant in Hattiesburg. Purchase price is said to be \$200,000.

Mr. Spivy said extensive expansion and improvements are planned for the Hattiesburg plant. He said most present personnel will be retained, and additional persons would be hired to handle enlarged operations.

MFC plans to rebuild the plant and install new machinery for the manufacture of fertilizer. Estimated costs of improvements will approximate \$200,000.

Ralph E. Fraser Dies, Was With Summers 35 Years

BALTIMORE, MD.—Ralph E. Fraser, 66, vice president of Summers Fertilizer Co. and Northern Chemical Industries, died Dec. 9 in a Baltimore hospital following a heart attack.

He was well known in the agricultural chemical field, having served as a director of the former National Fertilizer Assn. and as a member of several national and local committees on safety, production and research projects in the fertilizer industry. Mr. Fraser was a native of Presque Isle, Maine, and a 1917 graduate of the College of Technology of the University of Maine. He also took post graduate work at the Massachusetts Institute of Technology.

He became associated with the Summers company and its affiliates in 1925. During World War I he was in the U.S. Merchant Marine as a marine engineer. He is survived by his widow and a sister.

V-C Phosphate Workers Vote in Teamsters Union

BARTOW, FLA.—Employees of Virginia-Carolina Chemical Corp.'s phosphate operations here on Dec. 3, voted 348 to 273 in favor of having the Teamsters Union be their bargaining agent. According to V-C officials, this was the first time that the Teamsters Union has entered the fertilizer industry.

The election was held under auspices of the National Labor Relations Board, which supervised the balloting. NLRB had set up the election after a previous vote on August 26 failed to produce a majority for any of the three choices on the ballot. The previous election was to decide whether the workers wanted to be represented by the International Chemical Workers Union, the Teamsters Union, or by no union at all.

A letter sent to V-C employees by C. V. O. Hughes, manager, Mining Division; L. W. Harris, administrative assistant, and W. C. Thomas, manager of the Harding plant, stated that the company expects to exercise no discrimination either for or against employees by virtue of their being a member or not a member of the union. "Membership in a union is not a condition of employment or enjoyment of full benefits at V-C," the letter said.

Becomes Assistant Manager

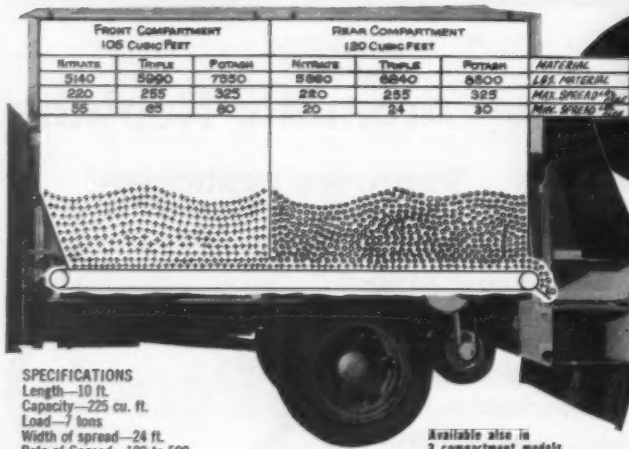
ATLANTA, GA.—The promotion of J. T. Parkerson, Jr., to position of assistant general manager at the East Point plant of Tennessee Corp. has been announced. Mr. Parkerson, stationed in Atlanta, was a sales and technical service specialist on liquid sulfur dioxide prior to this promotion.



APPOINTED BY V-C—Virginia-Carolina Chemical Corp. has appointed Donald E. Kingsley and Earl T. Grassit assistant managers of its triple superphosphate sales department. Mr. Grassit is responsible for triple sales west of the Mississippi River, and Mr. Kingsley east of the river. Mr. Grassit, an alumnus of the University of Minnesota, was formerly assistant to manager at V-C's Dubuque, Iowa, sales office. Mr. Kingsley, formerly assistant to manager at V-C's Fort Wayne, Ind., office, is a graduate of Michigan State University.

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MAINTENANCE

Continued from page 1

the tooth surface caused by fine particles of metal or other abrasive materials. In this case the oil should be drained from the housing and the housing and teeth thoroughly flushed and cleaned. If the air surrounding the unit carries considerable floating dust, especially designed oil seals and air breathers should be used. On gear units which use a circulating oil system, filters should be installed and serviced frequently.

During the quarterly inspection it is well to check all bearings to see that there is no excessive wear that might cause malfunction in other components. If wear is excessive, operation will be noisy and improper tooth contact may result.

Alignment of the shafts should be checked at least twice a year so that there will be no pressures improperly distributed and no vibration resulting therefrom.

Since there is such a wide variety of gear types used in the fertilizer industry it is not possible to give specific lubrication procedures that will apply to all units; however, the following methods can often be employed on both open and semi-enclosed types:

Dip Lubrication

In this system some of the gear teeth pass through the oil and carry it up with them (requiring an adhesive oil). The gear pan on this type unit usually has an oil level indicator attached so that a constant level of oil can be maintained. In these units the oil should be changed every 3-6 months depending on temperature and intermittent high loads (rapid heating and cooling).

Manual Application

Except on units where drip-feed oilers are used, the lubricant is generally applied by brush or paddle. If the grease is applied cold an adhesive lube should be used so that it will stick to the teeth. The type lube used will depend on the speed and load transmission.

The frequency of manual application depends on daily hours of operation, speed, load and general operating conditions. In some cases lube may be required daily, and in other cases it may be necessary only once each week.

Splash or Bath Lubrication

This system is often found in units that are enclosed in oil-tight housings. In these units, light oils are employed and this oil must be of a quality to resist oxidation and the formation of sludge and have good defoaming qualities since there is no filter in this system.

In all gear units, the gears should be washed off with solvent or kerosene when the oil is changed. The type of lube to be used should be determined by the gear manufacturer or by lube manufacturers. Many of the major oil companies have lubrication engineers who will inspect the drives and motors in the plant and make recommendations for a complete lubrication program for all equipment.

If an operation is of sufficient size to warrant it, a color code and code number lubricant system may be installed. In this system the lubricants used are coded so that it is simple for the oiler to identify and also allows changes in lubricants without changes in the system. The lubrication points on the equipment are stamped with the code number of the oil and a colored spot can be placed on the unit to indicate the frequency of lubrication.

For example, the lubricants may be coded as A, B, C, etc., to indicate type, and the colors as orange for daily lubrication, yellow for weekly lubrication, etc.

Additional information on gear

maintenance and lubrication is available through the American Gear Manufacturers Assn.

From "Preventive Maintenance Procedure Manual" issued by International Minerals & Chemical Corp.

Fire Destroys Warehouse

HOMESTEAD, FLA.—Fire swept through an insecticide warehouse of the Tucci Brothers Packing Co. here Dec. 9.

Pat Tucci, president of the company, said he had just received a winter shipment of sprays. He estimated the loss at between \$15,000 and \$20,000.

Explosion Kills Two in Idaho Fertilizer Plant

POCATELLO, IDAHO—Two workmen were killed and six others injured in an explosion Nov. 30 at the fertilizer plant of J. R. Simplot Co. near here. Brent Hall, 24, and Elmer Mesowski, 35, died in the mishap which resulted from use of a cutting torch to remove an old pipe once used to carry ammonia.

As an aftermath of the accident, O. A. Knight, president of the Oil, Chemical & Atomic Workers Union in Denver, sent a telegram to Gov. Robert E. Smylie of Idaho, complaining of "dangerous conditions" in the plant.

W. L. Robison, Idaho State Labor Commissioner replied that he and another member of his department had inspected all phases of the plant's operation last June and found the premises to be in "very good condi-


tion" from a safety standpoint.

The Commissioner added that although same changes were recommended, they were complied with promptly. The recent explosion was regarded as not having occurred because of any existing hazard in the plant, the Commissioner observed.

Stauffer Moves Regional Offices to New Location

NEW YORK—Stauffer Chemical Company's agricultural chemicals division has moved its Northeast regional sales department to new, larger offices. The department is now located at 555 Fifth Ave., New York.

In addition to Northeast regional personnel the new office will be headquarters for Dr. P. D. Peterson, technical sales director for the agricultural chemicals division and Ray Kriner, agricultural research and development representative.



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Removing All Risk From Pesticides Would Halt Makers' Progress, Speaker Declares

WASHINGTON—Government controls of the chemical, food and agricultural industries should not be concerned solely with the elimination of all risks, but must balance it with the gains vital to the nation, David H. Dawson, a vice president of E. I. du Pont de Nemours & Co., told the food protection committee of the National Academy of Sciences here on Dec. 8. "To eliminate risk completely would be to bar progress," he said.

"Any consideration of risk without simultaneous evaluation of the potential benefit is . . . in grave danger of effectively preventing progress, or at least ensuring that it be achieved slowly," Dr. Dawson declared. "The problems involved in increasing food supplies faster than population growth are of such magnitude that we

need to accelerate and not to hinder their solution."

Citing chemical contributions to the production, processing and distribution of food, Dr. Dawson said: "The use of chemicals has been a major factor in producing greater variety, more safety, greater availability, increased attractiveness . . . and higher nutritive value in the food consumed by the American people."

The basic reason for these advancements, continued Dr. Dawson, "is an economic system and government climate which promised rewards to the inventor and innovator and allowed him a maximum degree of freedom to explore the new, with due but not excessive regard for the risks involved."

"The willingness to risk capital,"

he said, "has been subtly but profoundly influenced by the changes in legislation and in legislative climate which have developed in the past several years. This seems to reflect a public—certainly a legislative—desire to reduce the risk of any harmful effect of any chemical additive to foods, and preferably to make that risk approach zero."

"Now to argue against the reduction of risk to the consumer . . . is patently foolhardy," he said. "Every advance into the unknown has and will involve risk, and generally the greater the magnitude and rate of the advance, the greater the risk."

Further progress in chemical contributions to the food supply will depend to an important extent on the ability of the chemical and food industries to support the necessary research and to take the capital risks involved in manufacturing and marketing the products which research has uncovered.

50-Year-Old Firm Bought by Farm Bureau

DES MOINES, IOWA — The 50-year-old Imperial Chemical Co. at Shenandoah, Iowa, has been purchased by the Farm Bureau Service Co., with headquarters in Des Moines, it has been announced. Plans are under way for expansion of the business with Robert Jensen of Des Moines in charge of the new operation. George Zachert will continue as plant manager. This is the farm bureau's first weed control plant, now planned to serve farmers in six states.

Canadian Chemical Production Increases

OTTAWA — Production of most chemicals in Canada was larger in the Jan.-Sept. period this year as compared to last. Output of some of the principal chemicals in the first nine months of this year was: Sulphuric acid, 1,244,180 tons (1,197,902); ammonium sulphate, 237,413 tons (244,465); chlorine, 234,610 tons (208,771), and mixed fertilizers, 597,353 tons (567,658).

IMC Potash Mine Project Proceeding, Firm Officials Report

ESTERHAZY, SASK.—Shaft sinking at the potash mine which International Minerals & Chemical Corp. (Canada), Ltd., has under construction near Esterhazy, Sask., is "proceeding satisfactorily," according to T. M. Ware, IMC president.

In a report to IMC stockholders Mr. Ware said shaft sinkers were more than halfway through the 200-ft. water-bearing Blairmore sands, frozen at about -50° F. after a year of freezing. He said that a cast-iron lining, designed to assure maximum safety and uninterrupted production after the mine is completed, was being installed in five-foot rings, 11 segments to a ring, simultaneously with the sinking.

The 3,500-ton cast-iron lining, called "tubbing," is being installed by Associated Mining Construction, Ltd., an amalgamation of four German mining firms which has sunk more than 800 mine shafts throughout the world, over 300 of them using the freezing and tubbing techniques being employed at the IMC shaft.

Once through the Blairmore at about 1,450 feet, the shaft will be sunk through limestone strata to the potash deposits located at about 3,150 feet. The mine is expected to go into production in fiscal 1961-62.



HEAVE HO!—Miners muscle a 4-ton segment of a cast-iron lining into position in the shaft of the potash mine of International Minerals & Chemical Corp. (Canada) Ltd., at Esterhazy, Sask., Canada. The cast-iron lining ("tubbing") is used to wall off a 200-foot layer of water-bearing sand, which had to be consolidated first by freezing to -50° F. A pull cord is used to signal the hoist operator on the surface, 1,300 feet above. Operator is able to obey signals within a fraction of an inch.

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Production of Five Fertilizer Items Up During October

WASHINGTON—Production of a number of fertilizer products for October, 1960 showed a substantial increase over the output figures of September this year, according to a report issued by the U.S. Department of Commerce, bureau of the census.

The report says that synthetic anhydrous ammonia output for October was 387,282 tons as compared to 364,850 tons in September this year. However, stocks at producing plants were also higher in October as compared to September. The respective figures were: 153,624 tons and 117,115 tons.

Original solution ammonium nitrate also increased in production during October. Output of this product is reported as being 273,096 tons for

October as compared to 259,279 tons for September. As in the case of anhydrous ammonia, stocks at producing plants were also up in October. The report says that 167,707 tons were on hand at producing plants in October as compared to 135,186 tons the month before.

Nitric acid production was up some 7,000 tons in October as compared to September. Output in October was 288,004 tons and that of September, 281,001. Stocks at producing plants were 18,041 tons for October and 17,292 tons for September.

Phosphoric acid showed a considerable increase in production during October. The tonnage here was 183,353 tons as compared to 165,253 tons for September. Stocks at producing plants, however, did not rise as greatly as did those of some of the other commodities. Stocks at producing plants in October were reported at 27,128 tons for October as compared to 26,149 tons in September.

Sulphuric acid was also made in

larger quantities in October as compared to the previous month. The respective figures for October and September were: 1,489,433 tons and 1,350,253 tons. Stocks on hand of sulphuric acid were 619,062 tons for October and 562,051 tons in September.

Wins Fertilizer Award

BATON ROUGE, LA.—John Wilson Richardson, Louisiana State University sophomore from Colfax, La., has been named first recipient of the Louis Windham Memorial Scholarship in Agricultural Engineering, according to Dr. Fred H. Fenn, dean of the LSU College of Engineering. The scholarship, which carries a cash award, is offered by the Louisiana Anhydrous Ammonia Dealers Assn. It is named in honor of the late Louis Windham of Baton Rouge, a veteran staff member of the LSU agricultural extension service and at the time of his death an executive in the fertilizer industry.

Booklet Outlines Good Practices for Setting Up Emergency Program

WASHINGTON — Recommended practices and procedures in establishing emergency sections in chemical plants to take over responsibility to combat fires and explosions are available from the Manufacturing Chemists' Assn., Inc.

The pamphlet, outlining areas of responsibility of both company management and its emergency organization, emphasizes that "it is important that the responsibility for developing and administering the emergency plan be delegated to a respected and responsible individual representing management."

It is pointed out that any such plan should be practical, simple in form, easily understood and developed in anticipation of any predictable emergency. The four-page, illustrated MCA Safety Guide (SG-4) notes that any emergency plan should clearly define three basic objectives. They are:

"1. A clear allocation and designation of responsibility to each of the necessary participating units or individuals.

"2. The availability at all times of adequately trained personnel to discharge the designated responsibilities promptly and competently.

"3. The immediate functioning of the various service units or individuals activated by the emergency plan when the emergency alarm is given."

It is basic, the MCA pamphlet states, that any plan include provision for essential services to meet in-plant emergencies. These services include leadership at the scene of the emergency with full designation of alternate personnel to assume responsibility; establishment of an adequate communication system in the event normal communications channels are disrupted; development of an evacuation plan with responsibility assigned to those who would direct such an evacuation; coordination of plant activities with local law enforcement agencies; provision for maintenance of fire equipment facilities and fire fighting forces; preparation of a comprehensive repair and restoration program giving particular attention to shutdown procedures in order to prevent further additional hazards or aggravation of emergency conditions, and establishment of easily available medical centers for treatment of injured or disabled employees.

In addition, the pamphlet outlines establishment of necessary activities in the fields of welfare, information, transportation, reciprocal agreements with neighboring industries, utilities and public organizations, adequate training programs, protection of records and adequate recording of the emergency for future analysis.

Copies of the MCA emergency organization pamphlet are available from MCA offices, 1825 Connecticut Ave., N.W., Washington 9, D.C., at 20¢ each.

South Carolina Meeting Set

COLUMBIA, S.C.—A meeting of fertilizer manufacturers, as well as dealers and salesmen, is scheduled to be held at the Wade Hampton Hotel, Columbia, Thursday, Jan. 12, 1961, according to an announcement by Dr. Bruce D. Cloaninger, Clemson College. The meeting is scheduled to begin at 10:30 a.m. and will adjourn at 4:30 in the afternoon. According to Dr. Cloaninger, a crowd of nearly 500 may be expected.

DIVIDEND DECLARED

NEW YORK—The board of directors of Witco Chemical Co., Inc., at a meeting held on Nov. 29, voted a regular quarterly dividend of 20¢ a share, payable on Jan. 14, 1961, to shareholders of record as of Dec. 31, 1960.

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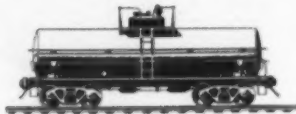
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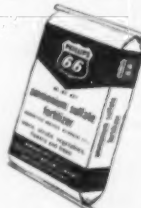
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Car Exhausts for Instance . . .**Public Activities Contribute 90% to Air Pollution; Industry 10%, Engineer States**

WASHINGTON — Air pollution control, both by industry and by people themselves, is one of the challenges of "the second industrial century," a conference of chemical engineers was told here Dec. 7.

The statement was made by Lauren B. Hitchcock, president of Hitchcock Associates, New York, in an address at a symposium on environmental health engineering during the 53rd annual meeting of the American Institute of Chemical Engineers.

The challenge "is whether man can deal . . . with the by-products of his achievements, including not only atom-splitting, but also smokes, dusts and gases which our civilization appears to accept as part of the price of progress," he said in a paper entitled "The Role of the Chemical Engineer in Air Sanitation."

The chemical engineer seems to have the qualifications necessary to combat air pollution which causes annual losses of \$11 billion in this country, and many of those engaged in air sanitation are chemical engineers, he said. "Their basic training in process engineering and the natural sciences, plus their industrial experience in the process industries, furnish excellent preparation for the demands of air sanitation engineering . . .

"The demonstrated versatility of the chemical engineer goes far to explain the success he has encountered in the field of air sanitation . . . His thorough training in a hard core of fundamentals and their application to man's needs, and his propensity for

research and development may account in part for this versatility. The chemical engineer, as much or more than any other technologist, is miscible in both solvents—the natural sciences and their application in the arts which we call engineering."

During the past 20 years air pollution has become "a much bigger problem" than smoke control, he said. In cities like Washington, where there is little industry, "about 90% of the pollution is estimated to come from activities of the public—transportation, rubbish burning, and heat and power requirements."

In places like Chicago, Philadelphia and the New York-New Jersey metropolitan area "the public contributes a smaller fraction of the greater total pollution, but still estimated at more than one-half." In New York City most of the particulate matter (grit and soot) comes from the burning of fuels and rubbish in power plants and incinerators, and most of the gases and aerosols from transportation.

Los Angeles, with the cleanest industry in the country, is "atypical" as it has "the most nearly stagnant atmosphere in any American city," and most of its pollution comes from motor vehicles. Mr. Hitchcock observed that if New York or Chicago had the stagnant atmosphere of Los Angeles, "survivors would quickly evacuate these cities."

Particulate matter in Manhattan declined in the early 1950s to a low of 74.5 tons per square mile per month "but it has climbed to about



ACID BARGE—A 750-ton barge load of superphosphoric acid solution was unloaded at the Jacques liquid mixed fertilizer plant at Prescott, Wis., recently, according to Charles A. Jacques, fertilizer plant manager. This is said to be the first time this ingredient has been delivered further north than Dubuque, Iowa. The barge shipment came from the Wilson Dam, Alabama, plant of the Tennessee Valley Authority's fertilizer division. The Jacques plant expects to double its tonnage to 6,000 tons in 1961. The company has grown with the liquid mixed fertilizer business in the area, which has risen from practically zero in 1958 to 6% to 7% of mixed fertilizer sales in 1960.

110 tons," half of the Chicago fall-out.

Statisticians have estimated that the national bill for battling atmospheric corrosion and cleaning buildings, clothing and laundry because of atmospheric soil amounts to about \$10 per capita or \$1½ billion annually. The total national bill for all air pollution costs has been placed at \$11 billion per year, or about \$65 per capita. Internal combustion engines in 60 million U.S. motor vehicles discharge unburned gasoline estimated at over \$1 billion worth annually apart from the unknown costs of resulting pollution. This is about \$20 per vehicle.

"The take-off of one commercial jet liner has been estimated to create a quantity of air pollution equivalent to that produced by 6,850 passenger cars."

To combat the \$11 billion damage done by air pollution, national federal agencies and local and state governments are spending about \$25 million annually and industry is spending "at least" \$300 million per year. Mr. Hitchcock termed this a "token attack", though there has been stepped up activity in this field in recent years.

Fertilizer-Pesticide Rules Changed in N. C.

RALEIGH, N.C.—North Carolina's State Board of Agriculture, following a public hearing in Raleigh, voted to make one change in state regulations governing mixed fertilizer grades and pesticides.

The board approved a request from farmers to allow the sale of 3-9-18 fertilizer mixture for peanuts. However, the board postponed action on a fertilizer industry suggestion that one grade for corn be dropped from the list of mixtures.

Dr. Eugene Kamprath, head of the State Agriculture Department's soil testing division, cautioned that the list of permitted mixtures represents fertilizer grades serving as carriers for the recommended pesticide rates per acre. He emphasized that the list is not an official recommendation of fertilizer grades or fertilizer rates.

The new North Carolina regulations governing pesticide-fertilizer mixtures went into effect Dec. 1, at which time former regulations expired. The new list will remain in effect until July 1.

Action was postponed until the new list expires on a request by Shell Chemical Co. for permission to mix a soil fumigant with fertilizer grades 6-12-12, 8-8-8 and 5-10-10. This proposal was opposed by other members of the fertilizer industry on grounds that the chemical requires critical ap-

plication controls "due to its toxicity to some plants."

Under the new North Carolina list, fertilizer grades which may be mixed with certain pesticides are: (1) 4-8-12, 5-10-10, 6-6-12, and 6-12-6 mixed with aldrin, dieldrin and heptachlor for corn; (2) 0-10-20, 2-12-12 and 3-9-18 mixed with aldrin and heptachlor for peanuts; (3) 3-9-9 and 4-8-13 mixed with aldrin, chlordane, dieldrin and heptachlor for tobacco.

The board also ruled aldrin, chlordane, dieldrin and heptachlor can be mixed with 4-10-10 for bulbs and sweet potatoes, 8-8-9 for Irish potatoes and 6-12-6 for sweet potatoes and other vegetables. The pasture fertilizer grade of 2-12-12 may be mixed with aldrin, chlordane and dieldrin.

To Make Dust Filter

MINNEAPOLIS, MINN.—The Day Company of Minneapolis has announced a new manufacturing and selling arrangement of its patented "RJ" Dust Filter, according to A. B. Osgood, president. The company has licensed Henry Simon, Ltd., of England to manufacture and sell the "RJ" Dust Filter throughout the world, exclusive of Canada and the U.S.

The "RJ" Dust Filter is used in the U.S. and Canada to control dust in the chemical and other industries. The makers say it will handle light or heavy grain loaded airstreams and can filter extremely fine, coarse, abrasive or non-abrasive dusts. It will also handle airstreams of temperatures as high as 300° F.

CORRECTION

Jere G. Moynihan



Rocco L. Russo

Photos of two individuals were inadvertently transposed in the "Personnel News" column of Dec. 5 CropLife. They are pictured correctly above, for the record. Mr. Moynihan, with Summers Fertilizer Co., was transferred by the company to Houlton, Maine, to assume new responsibilities there. Mr. Russo was named technical service manager by Hodag Chemical Corp., Skokie, Ill.

CropLife regrets this transposition of pictures and hopes the people involved will accept our apologies.

PROFITS GROW BEST WITH LIQUID FERTILIZER

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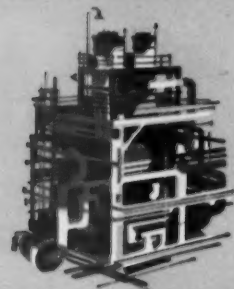
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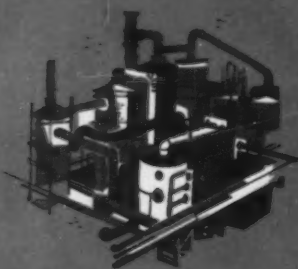




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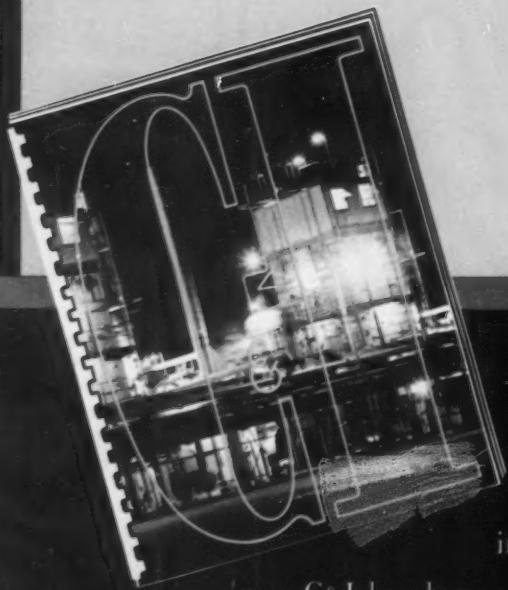
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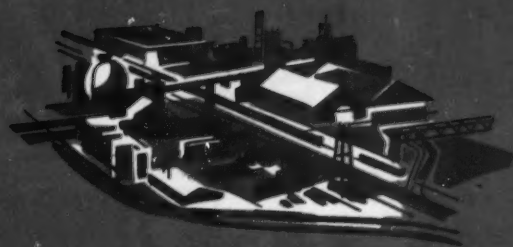


AMMONIUM NITRATE—Short Path Tower



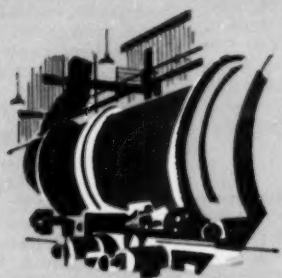
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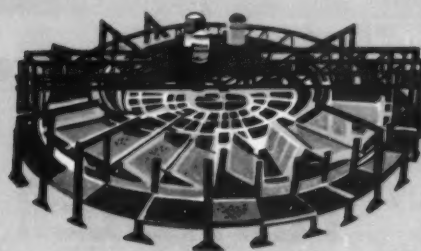


SPHERODIZER PROCESS

for '61



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PRODUCTION PROCESS PATENTS

2,960,431

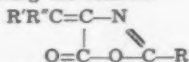
Synergistic Insecticidal Compositions. Patent issued Nov. 15, 1960, to Howard A. Jones and John A. Garman, Baltimore, Md., and Berton C. Dickinson, Lyndonville, N.Y., assignors to Food Machinery & Chemical Corp., New York, N.Y. A method of killing insects which comprises applying to the insects and their habitat synergistic insecticidal compositions comprising phenyl N-allylcarbamate and O,O-dimethyl S-(1,2-dicarbethoxyethyl) dithiophosphate wherein said components are employed in the ratio of from about 1 part of said dithiophosphate to about 2 parts of said carbamate ester.

2,960,432

Synergistic Insecticidal Compositions. Patent issued Nov. 15, 1960, to Howard A. Jones and John A. Garman, Baltimore, Md., and Berton C. Dickinson, Lyndonville, N.Y., assignors to Food Machinery & Chemical Corp., New York, N.Y. Synergistic insecticidal compositions comprising O,O-diethyl O-(2-isopropyl-4-methylpyrimidyl-6)dithiophosphate and phenyl N-methylcarbamate, wherein said components are present in the ratio of about four parts of said carbamate per part of said dithiophosphate.

2,960,595

Method for Control of Plant Growth. Patent issued Nov. 15, 1960, to Johannes Thomas Hackmann and Pieter Ten Haken, Herne Bay, England, assignors to Shell Oil Co. A method for the growth control of plants comprising the steps of contacting said plants with a composition comprising a dihydro-oxazolone derivative having the formula

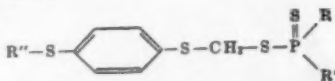


wherein R is chosen from the class consisting of alkyl from 1 to 10 car-

bon atoms, aralkyl wherein the alkyl moiety contains from 1 to 10 carbon atoms and aryl radicals, R' is chosen from the class consisting of aryl, aralkyl wherein the alkyl moiety contains from 1 to 10 carbon atoms and the heterocyclic radicals, pyridyl, quinolyl, furyl, pyrrolyl, thienyl and thiazolyl and R'' is a hydrogen atom with the proviso that R' and R'' taken together are a heterocyclic radical; in admixture with an agricultural carrier and a surface-active agent therefor, said dihydro-oxazolone derivative being present in said composition in sufficient quantity to effect plant growth when said composition is applied to plants.

2,961,458

Phosphorus Containing Insecticidal Compounds and a Process for Their Production. Patent issued Nov. 22, 1960, to Ernst Schegk, Wuppertal-Elberfeld, and Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignors to Fabenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. A phosphorus containing compound of the following general formula:

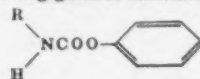


wherein R and R' stand for a member selected from the group consisting of lower alkyl and lower alkoxy groups, R'' stands for lower alkyl groups, and X stands for a member selected from the group consisting of oxygen and sulfur.

2,961,570

Synergistic Insecticidal Compositions. Patent issued Nov. 22, 1960, to Howard A. Jones and John A. Garman, Baltimore, Md., and Berton C. Dickinson, Lyndonville, N.Y., assignors to Food Machinery & Chemical

corp., New York. A method of killing insects which comprises applying to the insects and their habitat synergistic insecticidal compositions comprising O,O-dimethyl S-(1,2-dicarbethoxyethyl) dithiophosphate and an organic carbamate ester having the following general formula:

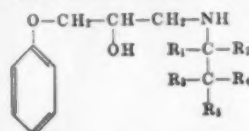


wherein R is selected from the group consisting of phenyl, furfuryl, benzyl, cyclohexyl and 1-naphthyl, said components being present in the ratio of about 2 parts of said carbamate ester to about 1 part of said dithiophosphate.

2,961,372

Pesticide. Patent issued Nov. 22, 1960, to Jamal S. Eden, Akron, Ohio, assignor to Diamond Alkali Co., Cleveland, Ohio.

The method of controlling insects and microorganisms which comprises contacting said pests with a pesticidal composition containing as an active ingredient an alkylaminophenoxy-2-propanol of the structure



wherein R₁, R₂, R₃, R₄, and R₅ are selected from the group consisting of hydrogen atoms and lower alkyl radicals, at least one of which is alkyl.

2,959,476

Method of Controlling Aquatic Plants. Patent issued Nov. 15, 1960, to Johannes Van Overbeek, Modesto, Cal., assignor to Shell Oil Co. The method of treating a body of water to control aquatic life comprising adding acrolein to said body of water at a rate sufficient to control said aquatic life.

2,962,416

Stabilizing Agents for Bordeaux Mixture. Patent issued Nov. 29, 1960, to Wilbur S. Taylor, Norwalk, Conn., assignor to R. T. Vanderbilt Co., Inc., New York. A stabilized Bordeaux mixture comprising (1) from 0.5 to 6% by weight, based on the solids content of the Bordeaux mixture, of a polyhydroxyl stabilizer selected from the group consisting of mannose,



"Well, open the door, stupid!"

xylose, mannitol, sucrose, sorbitol and invert sugar, and (2) calcium lignosulfonate in a proportion from 1 to 4 to 4 to 1 based on the weight of the polyhydroxyl stabilizer.

2,962,417

Nitroaryl Disulfide Pesticide. Patent issued Nov. 29, 1960, to John F. Harris, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Co., Wilmington, Del. A method for controlling bacterial and fungal pests which comprises applying to areas to be protected, in amount sufficient to exert a biological toxicant action, a nitroaryl disulfide of the formula Ar-S-S-Y where Ar is an aromatic hydrocarbon having from 6 to 10 carbon atoms and containing from 1 to 2 nitro groups, and Y is a hydrocarbon group having from 1 to 10 carbon atoms, said group being selected from the class consisting of unsubstituted hydrocarbyl radicals and monosubstituted hydrocarbyl radicals in which the substituents are selected from the class consisting of carboxyl, carbonyl, alkoxy, carbonyl, alkoxythiocarbonyl, sulfonic and hydroxyaryl radicals.

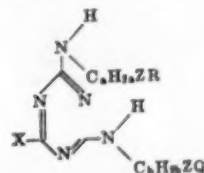
2,962,418

Toxicant Carrier and Pesticidal Compositions Containing Same. Patent issued Nov. 29, 1960, to Edgar W. Sawyer, Jr., Metuchen, N.J., assignor to Minerals & Chemical Philipp Corp. A carrier for a thiophosphate-type toxicant in solid particulate form comprising a sorptive naturally occurring siliceous mineral having distributed on the surface thereof at least one unsaturated organic acid in an amount of from about 5% to about 10% by weight based on the weight of said siliceous mineral, said unsaturated organic acid being selected from the group consisting of unsaturated fatty acids and resin acids having from about 6 to 22 carbon atoms and having an Iodine Number of at least about 70.

2,959,519

Fungicidal Composition Comprising a 2-Halo-4,6-Bis (Amino) -8-Triazine. Patent issued Nov. 8, 1960, to Angelo John Speziale, Kirkwood, and Ernest G. Jaworski, Florissant, Mo., assignors to Monsanto Chemical Co.

The process of controlling parasitic fungus growth on plants which comprises applying to the plants a fungicidal composition having as an active ingredient a substituted s-triazine compound of the structure



where Z is a member selected from the group consisting of sulfur and oxygen, X is a member selected from the group consisting of chlorine and bromine, a is an integer from 1 to 6, b is an integer from 1 to 6, R is a radical selected from the group consisting of alkyl radicals and alkenyl radicals having up to 8 carbon atoms,

Turn to PATENTS, page 18

An announcement of interest to

FERTILIZER MANUFACTURERS:

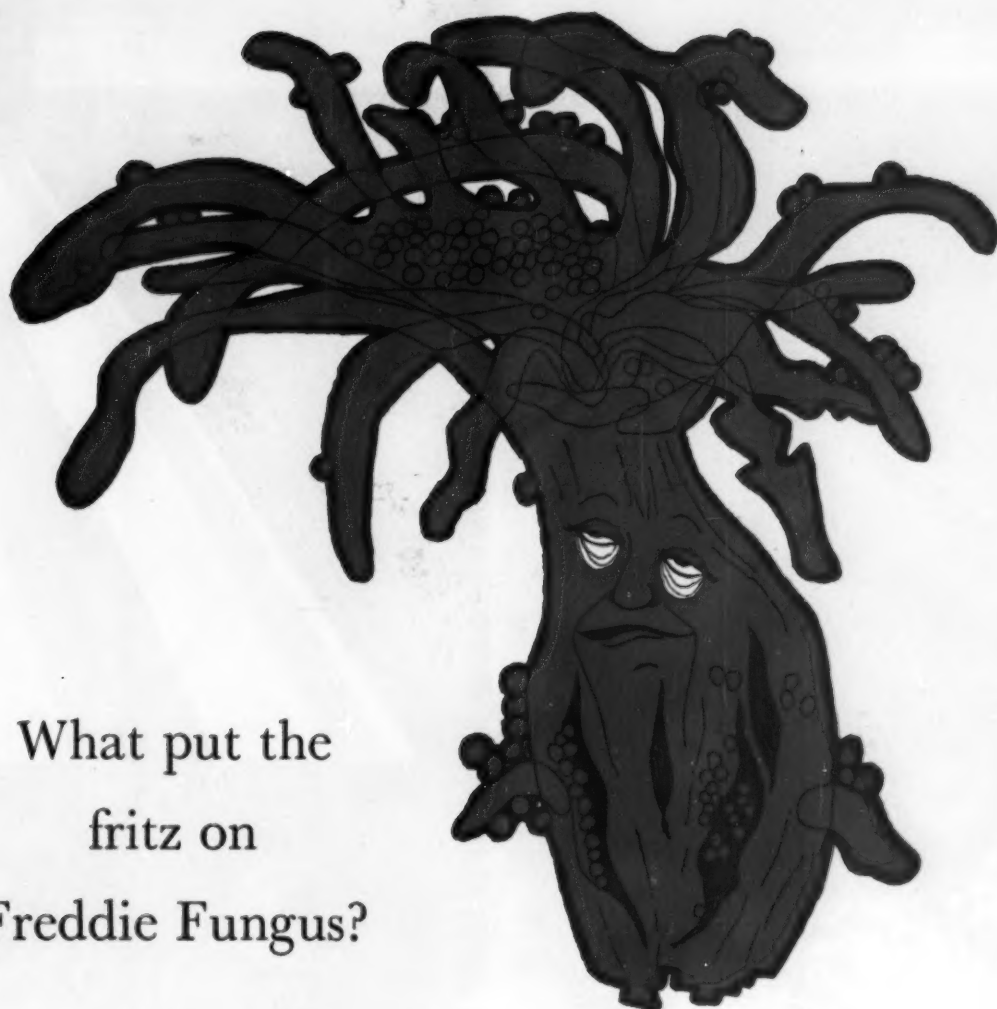
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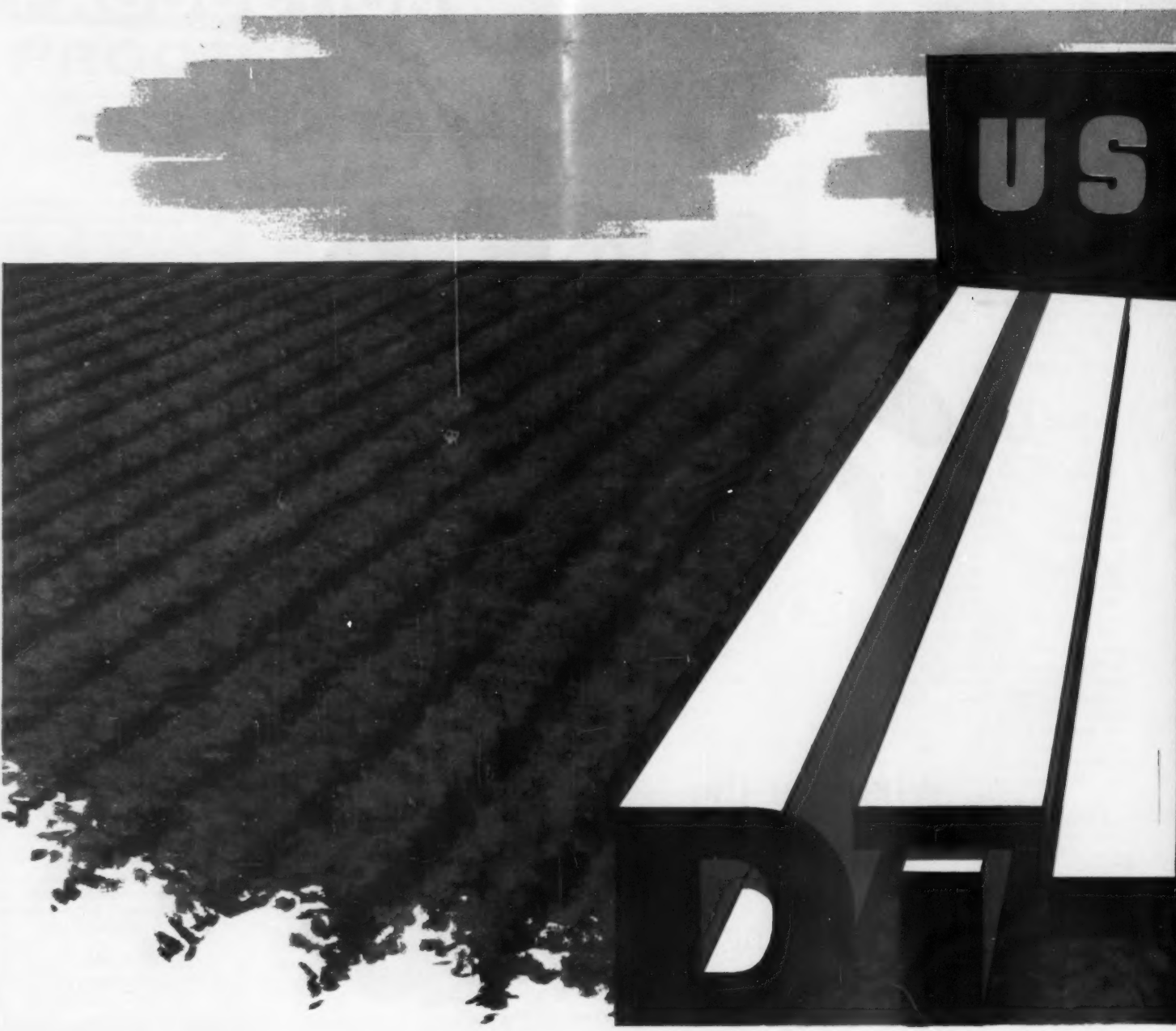
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PATENTS

Continued from page 14

and the corresponding halogen substituted radicals in which the halogen is selected from the group consisting of chlorine and bromine, Q is a radical selected from the group consisting of alkyl radicals and alkenyl radicals having up to 8 carbon atoms and the corresponding halogen substituted radicals in which the halogen is selected from the group consisting of chlorine and bromine.

2,960,430

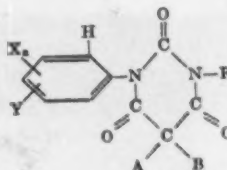
Synergistic Insecticidal Compositions. Patent issued Nov. 15, 1960, to Howard A. Jones and John A. Garman, Baltimore, Md., and Berton C. Dickinson, Lyndonville, N.Y., assignors to Food Machinery & Chemical Corp., New York, N.Y. A method of killing insects which comprises apply-

ing to the insects and their habitat a synergistic insecticidal composition comprising O,O-dimethyl S-(1,2 dicarboxy-ethyl) dithiophosphate and phenyl N-methyl carbamate, wherein said components are employed in a ratio of from about 10 parts of said carbamate ester per part of said dithiophosphate to about 1 part of said carbamate ester to about 5 parts of said dithiophosphate.

2,959,475

Method for the Control of Weeds. Patent issued Nov. 8, 1960, to Raymond W. Luckenbaugh, Wilmington, Del., assignor to E. I. duPont de Nemours & Co., Wilmington. The method for the control of weeds comprising applying to the locus to be treated, in a herbicidally effective amount,

a compound represented by the formula



wherein X is selected from the group consisting of hydrogen, chlorine, bromine and alkyl groups containing less than 5 carbon atoms; Y is selected from the group consisting of hydrogen, chlorine, bromine, alkyl groups containing less than 5 carbon atoms, and nitro, with the proviso that Y is nitro only when X is halogen; n is a positive integer less than 4; R is an alkyl group of less than 5 carbon atoms; A is selected from the group consisting of hydrogen, chlorine, bromine, alkyl groups of less than 5 car-

bon atoms, alkali metals and alkaline earth metals; and B is selected from the group consisting of hydrogen, chlorine, bromine and alkyl groups of less than 5 carbon atoms.

2,962,357

Defluorination of Phosphoric Acid. Patent issued Nov. 29, 1960, to William B. Williams, Evanston, Ill., and Donald E. Tynan, Lakeland, Fla., assignors to International Minerals & Chemical Corp. A method of defluorinating fluorine-containing wet process phosphoric acid containing at least 48% by weight of P_2O_5 and at least 0.5% by weight of fluorine which comprises boiling a liquid body of said acid by introducing hot combustion gases of a hydrocarbon fuel issuing from a burner mechanism beneath the acid surface and passing said hot gases through the acid, said combustion gases being in sufficient quantity to boil the acid by the direct transfer of heat from the combustion gases to the acid and, simultaneously with the introduction of said hot combustion gases, introducing steam beneath the surface of the liquid acid at a temperature above about 275° F. and in an amount of at least about 45 pounds of steam per unit of P_2O_5 , thereby effecting an evolution and entrainment of fluorine in the steam and combustion gaseous mixture passing through said acid and increasing the P/F ratio of the acid to at least 100.

2,961,369

Synergistic Insecticidal Compositions. Patent issued Nov. 22, 1960, to Howard A. Jones and John A. Garman, Baltimore, Md., and Berton C. Dickinson, Lyndonville, N.Y., assignors to Food Machinery & Chemical Corp., N.Y. A method of killing insects which comprises applying to the insects and their habitat a synergistic insecticidal composition comprising O,O-dimethyl S-(1,2-dicarboxyethyl) dithiophosphate and a carbamate ester selected from the group consisting of phenyl-N-(3-methoxypropyl)-carbamate and phenyl-N-carboxymethyl carbamate said components being present in the ratio of about 2 parts of said carbamate ester to about 1 part of said dithiophosphate.

2,961,371

Synergistic Insecticidal Compositions. Patent issued Nov. 22, 1960, to Howard A. Jones and John A. Garman, Baltimore, Md., and Berton C. Dickinson, Lyndonville, N.Y., assignors to Food Machinery & Chemical Corp., New York. Synergistic insecticidal compositions comprising O,O-diethyl O-(4-nitrophenyl)thiophosphate and phenyl N-methylcarbamate, wherein said components are present in the ratio of about four parts of said carbamate per part of said thiophosphate.

Superintendent Dies Under Slide of Bulk Fertilizer in Plant

ALBANY, GA.—William A. (Bill) Ford, 57, veteran plant superintendent of the Albany Warehouse Co., fertilizer plant, was killed Dec. 1 when he was buried under a slide of bulk fertilizer in the plant.

J. P. Champion, Sr., company president, said the tragedy was witnessed by several workers. Mr. Ford was extricated from the fertilizer mass and rushed to an Albany hospital where he was pronounced dead on arrival.

Mr. Champion reported that a "ledge" of bulk fertilizer apparently collapsed as Mr. Ford was walking nearby.

Mr. Ford had been employed by the company for about 30 years and "was a most valuable man" in the operation, the company president said.

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Where Are Your Best Fertilizer Markets?

NEW 1959 CENSUS FIGURES NOW BEING RELEASED SHOW WHICH COUNTIES AND CROPS USE THE MOST FERTILIZER

New information about the importance of each county in the United States as a fertilizer market is now being made available with the release of preliminary reports from the 1959 Census of Agriculture. These reports contain a wealth of data of vital interest to everyone who sells dry or liquid mixed fertilizers and fertilizer materials.

As we go to press, information has been published on counties in 34 states. Data on counties in additional states are now being compiled and will be released soon.

These preliminary reports reveal many findings on the use of commercial fertilizer:

- **Total farms in each county.**
- **Farms using fertilizer.**
- **Total acres fertilized.**
- **Total tons of fertilizer.**
- **Tons of dry materials used.**
- **Tons of liquid materials used.**

For each major crop classification for each county, the reports show the total acres fertilized and the amounts of dry and liquid materials used. Thus you have a graphic picture of the fertilizer market by counties and by crops. (*All figures on the use of fertilizer are based on information obtained from every fifth farm projected to cover all farms in the county.*)

To demonstrate to you the type of information that is contained in these preliminary reports, the Arcadian News has

prepared statewide tables for Illinois, Indiana and Ohio which appear on the two following pages. Similar data are available for each county in the three states, but space does not permit tables for all counties. We have also prepared a county map of the three states showing degree of intensity of commercial fertilizer consumption by counties.

It is interesting to note that corn is by far the largest user of commercial fertilizer in these three states, consuming 60% more than all other crops combined. Wheat is in second place with soybeans third.

From 1954 to 1959, there was a 19.6% reduction in total number of farms in the three states and a 12.7% reduction in number of farms using commercial fertilizer; but the number of acres fertilized increased 3.7%.

Are You Interested?

After you have examined the map and the data on the following two pages, please let us know whether you would be interested in having a similar county map of the entire United States and fertilizer data on each county similar to the statewide data on Illinois, Indiana and Ohio.

If enough of our readers desire such data, Arcadian News will tackle the monumental task of tabulating and reproducing all of this information and placing it in your hands, without charge or obligation. Of course this cannot be done until preliminary census reports for all states have been released. Please let us know your wishes. Simply write to: ARCADIAN NEWS, Nitrogen Division, Allied Chemical Corporation, 40 Rector Street, New York 6, N. Y.

1959 Fertilizer Consumption

Based on U.S. Census of Agriculture Preliminary Figures Just Released

ILLINOIS

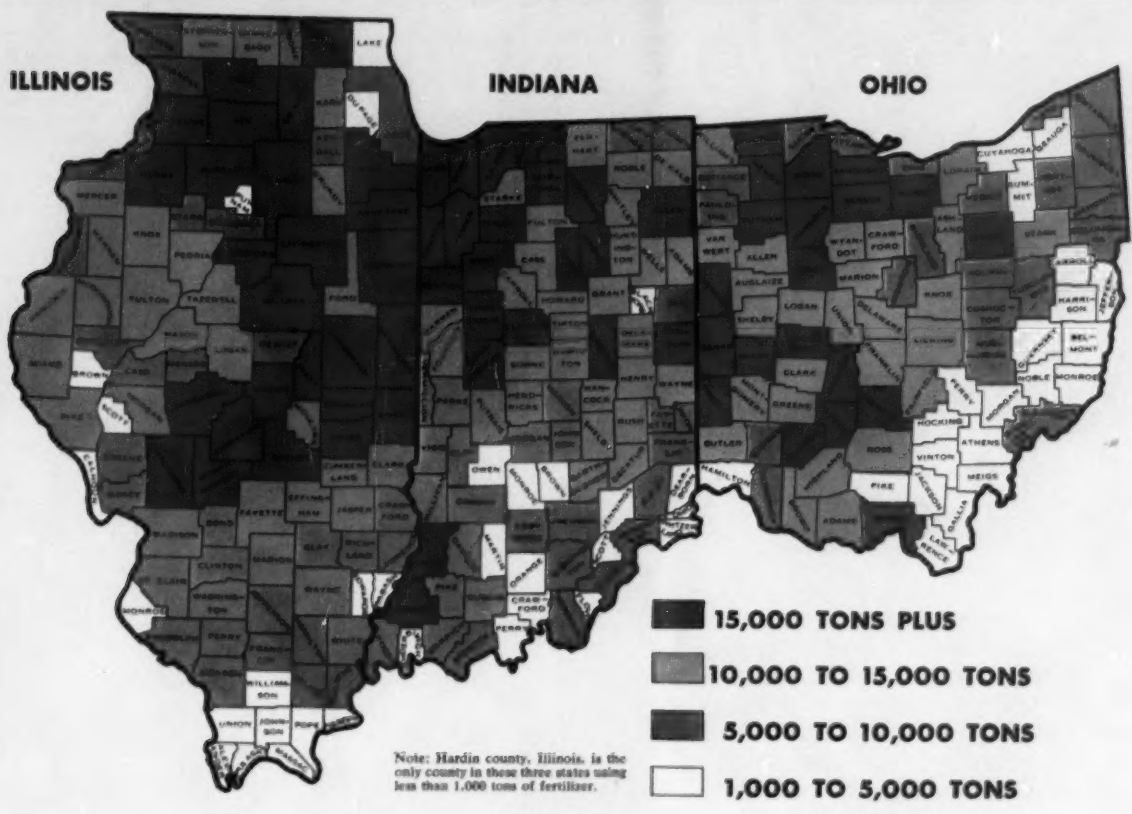
TOTAL FARMS IN STATE 154,640
 FARMS USING FERTILIZER 107,632
 TOTAL TONS OF FERTILIZER . . . 1,219,329

CROP	Acres Fertilized	Tons Dry Material	Tons Liquid Material
CORN	6,483,003	677,542	143,481
WHEAT	1,255,233	147,045	15,171
SOYBEANS	489,998	55,984	1,754
HAY & CROPLAND PASTURE	318,789	76,013	2,156
All Other Crops <small>Including Non-Cropland Pasture</small>	532,075	97,262	2,921
TOTAL ALL CROPS	9,079,098	1,053,846	165,483

INDIANA

TOTAL FARMS IN STATE 128,160
 FARMS USING FERTILIZER 102,416
 TOTAL TONS OF FERTILIZER . . . 1,005,600

CROP	Acres Fertilized	Tons Dry Material	Tons Liquid Material
CORN	4,839,631	581,559	58,415
WHEAT	1,163,838	140,987	6,182
SOYBEANS	823,685	63,284	1,437
HAY & CROPLAND PASTURE	302,942	40,451	1,284
All Other Crops <small>Including Non-Cropland Pasture</small>	890,769	108,103	3,898
TOTAL ALL CROPS	8,020,865	934,384	71,216



OHIO

TOTAL FARMS IN STATE 140,353
FARMS USING FERTILIZER 111,441
TOTAL TONS OF FERTILIZER 933,759

CROP	Acres Fertilized	Tons Dry Material	Tons Liquid Material
CORN	3,423,979	489,658	22,800
WHEAT	1,273,750	176,246	4,880
SOYBEANS	296,657	26,342	586
HAY & CROPLAND PASTURE	279,306	42,375	521
All Other Crops <small>Including Non-Cropland Pasture</small>	1,118,438	166,862	3,489
TOTAL ALL CROPS	6,392,130	901,483	32,276



NITROGEN SOLUTIONS

	CHEMICAL COMPOSITION %					PHYSICAL PROPERTIES			
	Total Nitrogen	Anhydrous Ammonia	Ammonium Nitrate	Urea	Water	Neutralizing Ammonia Per Unit of Total N (lbs.)	Approx. Sp. Grav. at 60°F	Approx. Vap. Press. at 104°F per Sq. in. Gauge	Approx. Temp. at Which Salt Begins to Crystallize °F
NITRANA®									
2	41.0	22.2	65.0	—	12.8	10.8	1.137	10	21
2M	44.0	23.8	69.8	—	6.4	10.8	1.147	18	15
3	41.0	26.3	55.5	—	18.2	12.8	1.079	17	-25
3M	44.0	28.0	60.0	—	12.0	12.7	1.083	25	-36
3MC	47.0	29.7	64.5	—	5.8	12.6	1.089	34	-30
4	37.0	16.6	66.8	—	16.6	8.9	1.184	1	56
4M	41.0	19.0	72.5	—	8.5	9.2	1.194	7	61
6	49.0	34.0	60.0	—	6.0	13.9	1.050	48	-52
7	45.0	25.3	69.2	—	5.5	11.2	1.134	22	1
URANA®									
6C	43.0	20.0	68.0	6.0	6.0	9.3	1.180	12	39
6M	44.0	22.0	66.0	6.0	6.0	10.0	1.158	17	14
10	44.4	24.5	56.0	10.0	9.5	11.0	1.114	22	-15
11	41.0	19.0	58.0	11.0	12.0	9.2	1.162	10	7
12	44.4	26.0	50.0	12.0	12.0	11.7	1.087	25	-7
13	49.0	33.0	45.1	13.0	8.9	13.5	1.033	51	-17
DURANA®									
<small>DURANA is a trade-mark of Allied Chemical Corporation.</small>									
	37.0	13.3	53.4	15.9	9.4	7.2	1.235	0	36
U-A-S®									
A	45.4	36.8	—	32.5	30.7	16.2	0.932	57	16
B	45.3	30.6	—	43.1	26.3	13.5	0.978	48	46
Sublimed Ammonia	82.2	99.9	—	—	—	24.3	0.618	211	-108

*DURANA contains 8% formaldehyde.

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Production MAN of the MONTH



John J. Souter

Texas Superintendent Introduces New Ways For Improving Output

A PRODUCTION superintendent whose responsibility is to be sure his plant lives up to the company's slogan, "Quality and Service Is Our Watch Word," has a big job on his hands. This is the situation with John Souter, superintendent of Red Star Fertilizer Division of Southern Farm Supply Assn., Inc., Sulphur Springs, Texas. His manager, Archie Edwards and general manager, Tom C. Jones, say that John has held up his end of the job admirably.

Mr. Souter came to Red Star in 1955, after having spent a decade in plants in Missouri, Oklahoma and Ohio. He finally settled in Texas because, as he explains, the winters are milder and there existed a real production challenge at Red Star. Here experiments were under way to improve efficiency both from the standpoint of labor and general output of goods. He added that in addition to the challenges of his job, "fishing is mighty good" in Texas and this offered quite an inducement.

John Souter has been responsible for many changes in plant procedures at Red Star which have effected substantial savings in both manufacturing and labor costs.

When the plant was purchased in 1948 it was an ordinary "pulverized meal type" mixed goods and superphosphate production unit. In 1954, a \$250,000 complete steel and transite granulating unit was added, the first and most modern of its type in Texas.

New continuous pug mill type mixer and ammoniator is used. The product goes directly into the drying drum, rather than through a primary pelletizer as originally installed. Mr. Souter found that the end product was just as uniform by by-passing the primary unit. So he made possible an effective saving in both capital investment and maintenance cost in this move.

Four Omega Gravimetric Feeders accurately control flow of dry ingredients and Fisher & Porter Magnetic flow meters are used for nitrogen solution and phosphoric acid. "These automatic feeders and meters have

enabled us to hold our analysis within close tolerances," Mr. Souter says, plus the labor-saving advantage of automation.

Mr. Souter is on the lookout continually for additional ways and means of accomplishing economical shortcuts and production improvements. His quest has not been in vain, as is shown by Red Star's record of living up to its difficult motto.

Now, when he "goes fishing," he can meditate with pleasure on the accomplishments of his work in the plant, and that the production is going more smoothly because of his efforts in that direction.

TONNAGE REPORTS

Alabama

MONTGOMERY, ALA.—Fertilizer sales for October, 1960, were 12,690.78 tons greater in October, 1960, than during the same month of 1959, according to a report by R. C. Bamberg, commissioner of the Alabama State Department of Agriculture. Total tonnage for October of 1960 was 51,404.70 as compared to 38,713.92 tons in the same period of 1959.

The most popular grade was 0-14-14 of which 20,966.94 tons were sold. Next highest was 4-12-12, with 7,185.77 tons. Of materials, ammonium nitrate led with 3,913.06 tons, with 18% superphosphate following with sales of 2,468.51 tons.

California

SAN FRANCISCO — Commercial fertilizer sales in California reached almost to one-quarter of a million tons during the third quarter of the current year, registering another new high, according to the bureau of chemistry of the California State Department of Agriculture. Sales of 219,501 tons for the three month period ended last September 30, made a gain of about 7.5% over the corresponding period in 1959—204,000 tons.

The nine month total was also at a new high, although the rate of increase was less, about 2.5%. The

Named Vice President

NEW YORK — The promotion of Rudolph Cubicciotti to administrative vice president of Witco Chemical Co., Inc., has been announced. Mr. Cubicciotti will direct the planning and coordination of all activities that relate directly to future corporate growth. His responsibilities in this area extend to all Witco divisions.

Prior to his promotion, he was vice president of Sonneborn Chemical and Refining Corp.—a wholly owned Witco subsidiary. He joined Sonneborn in 1943.

1959 sales were 1,008,997, and the current year total increased to 1,032,617 tons.

Chief popularity for the nine-month period shifted from ammonia solution 20-0-0 to dry mixed fertilizers. Last year the two chemical groups were rated at 225,384 tons and 204,435 tons respectively in first and second spots; during 1960 the positions were reversed, and sales were registered at 219,388 and 188,209 tons.

Florida

TALLAHASSEE, FLA.—Total tonnage of fertilizer sales in Florida for the month of October, 1960, was 58,877.28 tons, according to the monthly report of the state department of agriculture's inspection bureau, Lee Thompson, commissioner.

Kentucky

LEXINGTON, KY.—Kentucky farmers purchased 461,786 tons of mixed fertilizers and "straight material" plant food, for the January-June, 1960 period, the University of Kentucky experiment station feed and fertilizer department reports.

The report said 383,304 tons of mixed fertilizer were sold and 77,262 tons of straight materials. About 1,220 tons of assorted materials were included in the sales, making a grand total for the six-month period of 461,786 tons.

Of the mixed materials, 5-10-15 was the highest tonnage with 96,614; 4-12-8 was the second with 62,897; 10-10-10 third with 50,315; 6-12-12 fourth with 31,980 and 5-20-20 fifth with 20,715. Ammonium nitrate was the most popular of the straight materials, 21,895 tons, and superphos-

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phate was second with 17,379 tons.

Bruce Poundstone, department head, noted that 82% of the mixed-fertilizer sales were in grades recommended by the UK station.

Oklahoma

OKLAHOMA CITY — Fertilizer tonnages for October, 1960, were greater than those for the corresponding month of 1959, according to a report issued by the State. October, 1960 tonnage was 24,273 tons, compared to 20,242 tons in October, 1959.

Largest tonnage in mixed fertilizer was 10-20-10, with 6,280 tons. This grade showed a big increase over the 4,289 tons sold in October, 1959.

Pacific Northwest Group Schedules Meeting

PORTLAND, ORE.—Pacific Northwest members of the Western Agricultural Chemicals Assn. will hold its 8th annual conference at the Benson Hotel here, Jan. 18-19.

The session is held in conjunction with meetings of the Northwest Vegetable Insect Conference and the Western Cooperative Spray Project scheduled Jan. 16-17.

Frank B. Stewart, general manager, Miller Products Co., Portland, recently elected vice president of WACA, will be director of the conference. Lin E. Harris, Grange Cooperative Wholesale, Spokane, Wash., will serve as program chairman.

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INDUSTRY PERSONNEL NEWS

Allied Promotes Eight

NEW YORK — Allied Chemical's Nitrogen Division has announced several promotions resulting from a recent decision to establish four major agricultural sales regions.

Four new positions were created at sales headquarters in New York and four regional sales managers appointed in the field.

Under the re-organization, the new regional sales managers will be responsible for both direct application fertilizer sales and fertilizer manufacturing material sales in their respective regions.

Promotions at New York headquarters:

Garvin C. Matthiesen has been appointed agricultural sales manager. He was Midwest sales manager, direct application sales.

Thomas C. Rogers, formerly sales

manager for fertilizer manufacturing materials, has been named product manager, fertilizer manufacturing.

George A. Kalteissen, previously Eastern sales manager, direct application materials, promoted to product manager, direct application sales.

Elmer Perrine has been named director of technical service, agricultural products. He was a technical service representative.

The new regional sales managers are:

Borden S. Chronister, Northeast regional sales manager at Raleigh, Va.; John R. Ritter, Southeast regional sales manager at Raleigh, N.C.; Dean Keller, Central regional sales manager at Indianapolis, Ind., and Homer E. Dudley, Western regional sales manager at Omaha, Neb.

Replaces Retiring Man

INDIANAPOLIS, IND.—Arthur R. Mullin, manager of the fertilizer department of the Indiana Farm Bureau Cooperative Assn. since 1944, will retire Dec. 31, according to an announcement by the co-op board.

Melvin Leach, fertilizer production manager, will succeed Mr. Mullin. Mr. Leach has more than 25 years ex-

perience in fertilizer manufacturing. For the last 21 years he has been with the co-op.

CSC Names Salesman

NEW YORK — Commercial Solvents Corp. has named Thomas E. Ashworth to its agricultural chemical sales staff according to Loy A. Everett, sales manager for CSC's agricultural chemicals department.



Thomas E. Ashworth

Mr. Ashworth is assigned to the Southeastern district with headquarters at the company's Atlanta office. He will travel in Florida, except the northwestern section, and reside in Gainesville. Prior to joining CSC, Mr. Ashworth sold pesticides in the southern states.

Technical Appointment

NIAGARA FALLS, N.Y. — Walter Q. Jack has been appointed supervisor, technical service, in the sales

department of the Western chemical division, Hooker Chemical Corp., it is announced by Russell O. Vognlid, division sales manager.

A 1950 graduate of the University of Washington, with a B.S. degree in chemical engineering, Mr. Jack has been with Hooker at Tacoma, Wash., since 1957 as a technical service engineer. Previously, he was a project chemist for seven years with the Pulp Division of Weyerhaeuser Timber Co., Everett, Wash.

Armour Names Six

ATLANTA, GA.—Several appointments by Armour Agricultural Chemical Co. have been announced by H. Vise Miller, vice president and general manager of the fertilizer division.

A. W. Chandler has been appointed manager of the Greensboro, N.C., division. Formerly sales manager of that division, he has been with the company since 1947. He succeeds H. H. Kemp, who is retiring.

N. D. Odom has been named assistant manager in the Memphis, Tenn., division. He was a salesman in that division, having been with the company since 1954.

M. E. Stambaugh, formerly a sales aide in the Carteret, N.J., division, has been named assistant manager of that division. He has been with the company since 1947.

S. C. Evans has been appointed assistant manager of the Baltimore, Md., division. A former sales aide in Baltimore, he joined the company in 1956.

O. M. Troyer, with the company since 1953, has been appointed branch manager of the Centralia, Mo., division. He has been a salesman in the East St. Louis division.

D. P. Brunetti has been appointed supervisor of specialty sales in the Carteret division, previously having been a salesman in that division since he joined the company in 1957.

Named by Richardson

CLIFTON, N.J.—John LeMay has been appointed manager of industry development for Richardson Scale Co. In this newly-created position, Mr. LeMay will act as coordinator of sales activities within industries served by Richardson, supervising planned marketing of Richardson systems for both custom and standard products. Mr. LeMay will cover marketing, promotion, equipment standardization, product design guidance, and research and development guidance. He joined Richardson in 1947.

FMC Appointment

NEW YORK—Arthur S. Alexander has joined the International Chemical Development and Operations Department, it was announced by Food Machinery & Chemical Corp. He will be located in the department's headquarters in New York City.

Mr. Alexander recently received his master's degree in business administration from Harvard University. Earlier he was associated with Bechtel Corporation for two years as a process engineer. He is a graduate in chemical engineering from Stanford University.

Joins Sales Group

MEMPHIS, TENN. — Marshall W. Wilkinson has joined the fertilizer sales organization of the Armour Agricultural Chemical Co., according to announcement by H. T. Ray, Memphis division manager. Mr. Wilkinson will operate out of Tupelo, Miss.

Southern Appointment

RALEIGH, N.C. — John R. Ritter has been appointed Southeast regional sales manager for Allied Chemical's Nitrogen Division, with headquarters in Raleigh.

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Borating your alfalfa fertilizer can mean bigger profits to you and your customers. Boron, a minor element, does major things for alfalfa. In fact, alfalfa responds so readily to boron that in some cases the yield actually doubles. Ample supplies of boron are so essential to profitable growth of alfalfa that most large producing states recommend annual applications. Each ton of alfalfa hay removed from the soil takes with it approximately 1.8 lbs. of borax — additional quantities are lost by leaching.

Building bigger profits for your customers by supplying this vital element in your alfalfa mixes can also build bigger profits for you. Millions of acres of alfalfa need boron every year. So, take advantage of this major market for a minor element. Always consult your state agricultural authorities for specific amounts to use.

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Such vigorous growth shades out weeds
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WHAT'S NEW

IN PRODUCTS • SERVICES • LITERATURE

To obtain more information about items mentioned in this department simply: (1) Clip out the entire coupon in the lower corner of this page. (2) Circle the numbers of the items of which you want more information. Fill in the name and address portions. (3) Fold the coupon double with the return address portion on the outside and fasten the edges with a staple, cellophane tape or glue. (4) Drop in the mail box.

No. 9302—Batch Mixer

Stedman Foundry & Machine Co., Inc., has announced its new model "R" batch mixer. It says the model "R" is the dry mixing version of the company's "RO" in the same sizes. Discharge door and chute, interior type, are manually operated. (Pneumatic available at additional cost, the company says.) Equipment includes full size discharge hood for dust control. Complete and rapid mixing action is claimed by the makers. Stedman also says that the maintenance of this equipment is greatly reduced and that streamlined design reduces over-all weight and floor space required and at the same time provides a more rugged machine. Full description and specifications of this equipment are available by checking No. 9302 on the coupon and mailing.

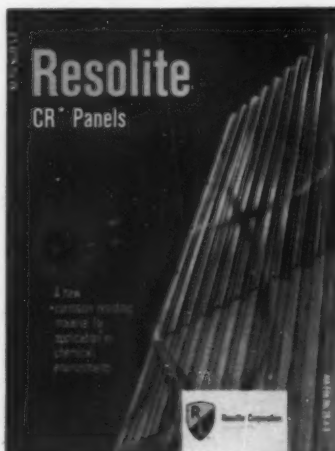
No. 9296—Truck Selection Booklet

Meeting the growing challenge of "proper truck selection" is the subject of a new 8-page, 2-color brochure offered by the Automatic Transportation Co. The booklet, according to its publishers, is the fifth of a series designed to give materials handling engineers information on the most adequate type of conveyance to use for different jobs. Case histories show how wrong trucks involved in different situations can cause unproductive output and increased costs. Photographs and other illustrative material emphasize the importance of proper

truck selection. Seven tips for choosing the right truck to fit each application are also listed. The booklet is available by checking No. 9296 on the coupon and mailing.

No. 9297—Corrosion-Resistant Panels

A new booklet describing in detail use of a new type corrosion-resistant panel on fertilizer plant structures has been made available by the Reso-



lite Corp. The booklet describes in detail the chemical and physical properties of the materials and describes the ability of these materials to withstand severe chemical environments. The makers state that these panels

have resisted corrosive attack for longer periods than metals even when in proximate or intimate contact with chemical elements. Complete information and a copy of the booklet are available by checking No. 9297 on the coupon and mailing.

No. 9290—Flexible Couplings

Diamond Chain Co. has introduced new flexible couplings which it says are shaft-rated to permit selection by shaft diameters. All working parts are said to be of high-tensile steel, heat treated to provide higher torque capacity and substantially longer service life. Diamond claims that shaft rating is a new development from its engineering department, eliminating multiple calculations ordinarily required when ordering flexible couplings. Couplings are available in both finished bore and taper lock bush types in stock sizes, the company says. For complete descriptive bulletins, check No. 9290 on the coupon and mail.

No. 9299—Corrosion-Resistant Pumps

R. S. Corcoran Co. offers three types of vertical knotted centrifugal corrosion-resistant pumps for small areas. The pump has triangular base



with open, closed, or explosion-proof motor available in 1/4 h.p. through 1 1/2 h.p., single and 3-phase. The makers say that the pump heads to 90 ft. and 65 GPM. Ports may be sized to specifications in IPS, flanged, or tube style for hose connections. For complete information on the corrosion resistant pump, check No. 9299 on the coupon and mail.

No. 9300—Multiwall Bag Closure

West Virginia Pulp & Paper Co. has introduced a new 4-ply Kraft tape closure which it says doubles the impact resistance of sewn-end multiwall bags. The makers state that the new closure tape minimizes bag breakage at the sewing line, which they say accounts for a large percentage of all sewn multiwall bag failures. The new closure consists of a piece of kraft tape, the edges of

which have been folded under the sewing line with the needle passing through four layers of the tape. Further information on the new type of closure is available by checking No. 9300 on the coupon and mailing.

No. 9303—Dust Collection Equipment

Torit Manufacturing Co. has announced a new line of automatic dust collectors suitable for the fertilizer or pesticide industries. Described as self-



cleaning, the equipment is constructed of 3/16 in. polished aluminum. The makers say that periodic shaking of cloth filter tubes combined with reverse air flow through the filters helps the machine to clean itself. This action is also enhanced by continuous removal of collected material by an adjustable screw conveyor at the base, and discharge of collected material through a rotary feed valve. The makers say that 11 models of the equipment are available, with the number of sections incorporated ranging from 2 to 12. Each model is 5 ft. deep and 15 ft. 6 in. high. Complete information is available by checking No. 9303 on the coupon and putting it in the mail.

No. 9291—Armored Pipe Bulletin

Haveg Industries, Inc., has announced a new bulletin describing the various properties of recently developed Haveg fibreglass reinforced plastic pipe for chemical corrosion control. Engineering facts, such as high impact resistance and corrosion control are illustrated by tables and charts in the bulletin. According to the makers, this manual makes it possible for engineers to select and specify the correct stock pipe and fittings plus custom engineered process equipment to meet the requirements of corrosion control and safety. For a copy of the bulletin, designated as "FRT-1," check No. 9291 on the coupon and mail.

No. 9298—Conveyor Belt Strengtheners

Goodall Rubber Co. has announced the availability of information covering use of oriented nylon strips both to strengthen conveyor belting and to



extend its life. The company says that results from more than a year of testing indicate that in extremely

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rugged applications, the new belt has given good service. Key to the performance of the new belt is said to be a core layer of nylon strip which has been oriented to give it exceptional tensile strength and minimum "stretchability." The new belts are designed to be worn out on one side, then turned over and used on the under side. For complete information on the use of these belts, plus specifications, check No. 9298 on the coupon and mail.

No. 9293—Diaphragm Relief Valve

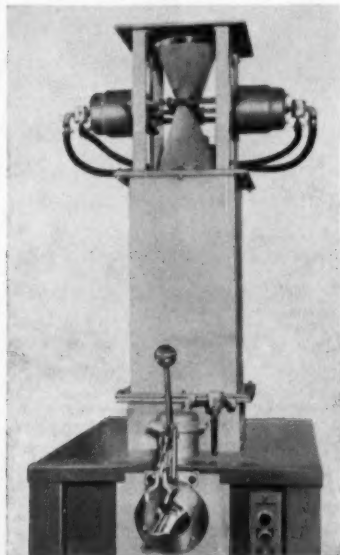
Farris Engineering Corp. has available a diaphragm relief valve for service where corrosive chemicals are a problem. The new diaphragm relief



valve is said to provide a vapor tight seal to prevent leakage and eliminate waste. The valves, spring and guides are isolated from the process fluid to avoid corrosion problems. According to the makers, the valve is available in a wide choice of materials, including type 316 stainless steel, neoprene and molded Kel-F, or stainless steel for diaphragm and disc. The makers say the valve is excellent for use with chemicals and slurries, as well as other liquids and gases. The valve is especially suited for nitrogen and other light gas service where an absolutely tight relief valve is required. For complete information on the item, check No. 9293 on the coupon and mail.

No. 9294—Bag Packer Accessory

E. D. Coddington Manufacturing Co. offers a new air-push hopper as



an accessory to the company's bag packer. Purpose of this unit is to widen the scope of materials that can

be packed by air, the makers say. The device provides a positive flow of granular as well as powdered materials through the packer by retaining a continuous air pressure in the hopper chamber which receives material from an overhead bin or supply hopper. Its size, the makers say, is determined by the amount of material required to fill a single bag. Full particulars on the Air-Pac valve bag packer and the new accessory may be obtained by checking No. 9294 on the coupon and mailing.

No. 9301—Leasing Information

Nationwide Leasing Co. has announced that fertilizer manufacturers may now lease equipment for terms as long as 6 to 12 years. According to the leasing firm, companies possessing a tangible net worth of \$1 million are eligible for these leases. Qualifications for extra long term

leases and other details of the plan are included in literature available by checking No. 9301 on the coupon and mailing.

No. 9304—New pH Meter



Coleman Instruments, Inc., has announced a new pH meter, which it says provides simplicity of operation

with precision within 0.05 pH. The instrument has a wide scale covering the full 0-14 pH range and is operated by three controls, only one of which is required for routine measurements, the makers say. Complete information on its operations and performance is available by checking No. 9304 on the coupon and mailing.

Commercial Solvents Reports 59% Earnings Rise

NEW YORK — A 59% increase in net earnings for the first nine months of 1960 was reported by Commercial Solvents Corp. Net earnings totaled \$3,637,277 or \$1.30 per share, and are the company's highest net earnings for the first three quarters since 1951. This compares with \$2,285,061 or 82¢ per share for the same period last year.

Third quarter net earnings were \$1,019,099 or 37¢ per share.

- 12 - 12

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Cyanamid Plant Equipment Reduces Fluoride Emission 70%

BREWSTER, FLA.—Installation of a chain mill at the Brewster, Fla. phosphate processing plant of American Cyanamid Co. has resulted in a reduction of 70% of the gaseous fluoride emission from its triplesuperphosphate operation, the company has announced. The installation is said to be the first primarily for the control of air pollution from a triplesuperphosphate curing building.

Arthur Crago, manager of phosphate operations for Cyanamid, reports that installation of the chain mill was decided upon after three years of research and experimentation in which a thorough monitoring program was launched and other studies made to find the main sources of contamination of the air.

Upon determining that much of it came from the curing building, steps were taken to reduce this emission.

Describing the operation of the chain mill and its accessory equipment, Mr. Crago states that its installation modified the flow of material from the former pattern. Under the new method, the disintegrated material from the setting belt is now conveyed to the chain mills which break the triple particles to a size of one-half inch or less. From the chain mills it passes through air-swept tumbling drums for removal of the liberated fluorine.

"The fluorine is recovered in scrubbers and discharged to the gypsum disposal pond," Mr. Crago says. "The

triple from the tumbling drums is conveyed to the curing building. During the curing process a relatively small amount of fluorine is emitted to the atmosphere due to further reaction of the acid and phosphate rock in the triple.

"This is the first installation that is primarily for the control of air pollution from a triplesuperphosphate curing building. Although processes are different in various plants and our solution may not fit other plants, we are making our information available to the industry in the hope that it will assist others who might have similar problems.

"Initially, the cost of our chain mill installation is over \$500,000. In addition to this major capital investment, new operating expenses—labor, power and maintenance—will total more than \$100,000 a year.

"To date, American Cyanamid Co. has spent \$1,400,000 for pollution control equipment and in the study to set plant operating standards. By the middle of 1962, when installation of an electrostatic precipitator at our drying plant is completed, expendi-

tures for pollution control at this location will exceed \$2,000,000."

Equipment included in the installation, according to Mr. Crago, includes two TVA mixing cones for triple, each with a 50 ton-per-hour capacity; two setting belts, 60" wide and 250' long; two transfer belts, 42" wide, 81' long and operating at speed of 200 fpm; two chain mills, each 14' in height, 9' wide and 12' deep with eighty hammers of 46 lb. each; operates at 250 rpm.

Two tumbling drums, 8' diameter, 16' length, variable speed 9 to 18½ rpm, variable slope; one return belt, 30" width, 102' long, speed, 275 fpm; one shuttle belt, 24" width, 460' long, speed, 400 fpm; and first and second stage scrubbers and scrubber fan.

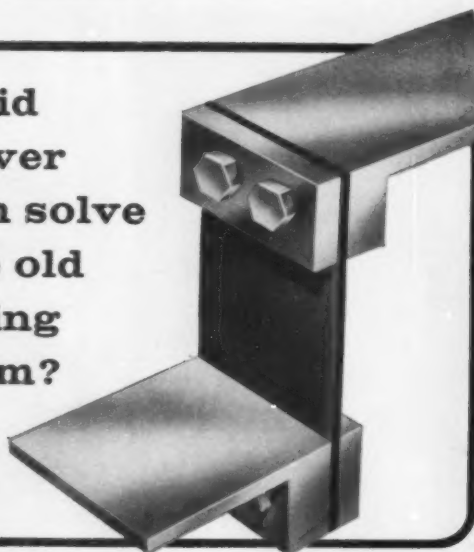
The latter moves 35,000 cfm, driven by 75 h.p. motor at speed of 1,800 rpm.

V-C Shifts Three

RICHMOND, VA.—Dr. D. Scott Sears has been appointed director of research and development in the chemicals division of Virginia-Carolina Chemical Corp. He succeeds Dr. Russell J. Rowlett, who resigned to join the Virginia Institute for Scientific Research.

Dr. Sears joined V-C in 1952 as a group leader in inorganic chemicals. The company also made known that Charles F. Booth has been named associate director of research and development and that George Boyd has been promoted from leader to section leader in inorganic chemicals.

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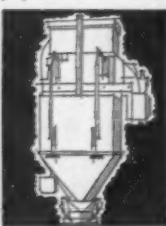
lever withstands shocks and vibrations indefinitely. Dirt and dust are no longer a problem. Thayer guarantees this leverage system accurate for the life of the scale.

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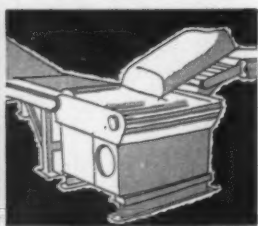
Working in conjunction with straight electrical controls, it forms the most reliable, low maintenance system ever devised to control processing or materials handling by weight. Literature on its application to filling, batching and checkweighing operations is available on request.



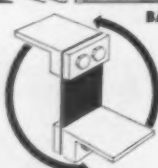
BATCHING



FILLING



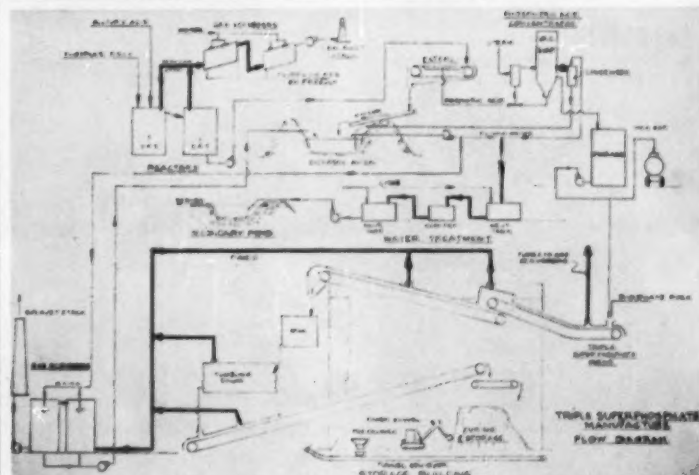
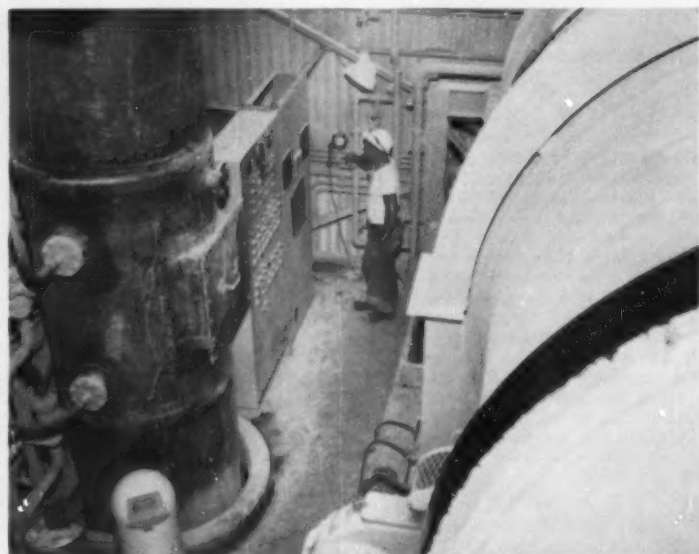
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POLLUTION CONTROL—In upper photo operator checks process of pollution control at the Brewster, Fla. plant of American Cyanamid Co. At right is drum in which triple superphosphate is tumbled to liberate gaseous fluorides after they have passed through chain mill. Pipe at left is plastic duct through which fluorides are drawn into scrubbers for capture. The installation is said to be the first designed to control pollution from a triple superphosphate curing building.

Lower cut shows schematic diagram of plant. Heavy lines indicate fumes being drawn off to scrubbers. Lower half of diagram shows chain mill equipment which is said to reduce fluorine emission 70%. With this installation, protection is now provided at all points where fluorine is released in process.

Hayes-Sammons Names Three New Officers

MISSION, TEXAS — The Hayes-Sammons Chemical Co., Mission, Texas, manufacturer of agricultural and oil field chemicals, has announced the election of Cornelius Vanderulis, senior vice president; Andrew N. White, Jr., vice president, sales; and Edward H. Metz, secretary and treasurer.

Mr. Vanderulis, previously secretary and treasurer, will continue as a director of the company. He attended business college in Rotterdam, Holland, and the University of Pennsylvania school of business administration. He was vice president and director of the Rock Hill Coal Co., Philadelphia, before joining Hayes-Sammons in 1950 as credit manager. In 1953 he was elected to the board and secretary and treasurer.

Mr. White is a 1947 graduate of Texas A&M College, with a B.S. degree in agriculture. Prior to joining Hayes-Sammons in 1953, he was with Chipman Chemical Co., U.S. Department of Agriculture and the Texas extension service. He was named general manager of the company's Dixie Division, Indianola, Miss., in 1956, and general sales manager of the company early this year.

A graduate of St. Mary's College in California, Mr. Metz holds a degree in business administration. He joined Hayes-Sammons in 1959 as controller.

Pyrethrum Production Rises in 1960 Season

NEW YORK—Pyrethrum production in the Kenya Colony of Africa rose by 60% in the year ended June 30, 1960, and growers received some \$2,780,400 more than they did during the previous year, according to a report in "Foreign Crops and Markets."

Almost all of the estimated 1960-61 crop is already covered by sales contracts, the report adds. Licenses issued for 1960-61 cover an estimated production of 10,300 tons (23.1 million pounds) from 45,000 acres. Licenses have gone to 45 African co-operatives, which deliver flowers on behalf of about 20,000 smallholding families.

PLANT FOUNDER DIES

LOS ANGELES — Paul Greening, 68, founder of the Greening and Smith Fertilizer Co., died Nov. 29. The fertilizer company was established in 1920.



Jason M. Elsas



Sheldon Y. Carnes

West Virginia Plans Program to Expand Multiwall Sales

West Virginia Pulp & Paper Co. is strengthening its multiwall bag division by consolidation of its sales organization on a divisional basis and launching of an intensive market development program. So states Victor S. Luke, division manager.

Jason M. Elsas and Sheldon Y. Carnes, managers respectively of the division's southern and northern regions, have been given new responsibilities on a divisional basis.

Mr. Elsas has been appointed to the new position of sales manager for the entire division. Presently located in New Orleans, he will move to division headquarters in New York to direct West Virginia's multiwall sales.

Mr. Carnes has been named market development manager for the division.

He will develop new markets for multiwall products and explore the market potential of new products in this field.

Mr. Elsas and Mr. Carnes joined West Virginia in 1958 when the company entered the multiwall field. Mr. Elsas had been vice president of Fulton Bag and Cotton Mills in New Orleans and Mr. Carnes was vice president and general sales manager with Arkell and Smiths, Canajoharie, N.Y.

Two shifts in district sales territories were also announced by Mr. Luke. The sales office headquartered at Charlottesville, Va., has been made part of the sales district centered in Atlanta, Ga., and the Kansas City district has been combined with the Chicago district. Henry M. Howe will direct sales for the consolidated district at Atlanta and H. Lockwood Frizzell, formerly district manager in Charlottesville, will manage the expanded Chicago district.

Chemical Engineers Elect

WASHINGTON—John J. Healey, an executive of the Monsanto Chemical Co., St. Louis, Mo., was named president of the American Institute of Chemical Engineers for 1961 at the group's recent meeting here.

Other officers named: J. Henry Rushton, professor of chemical engineering, Purdue University, was reelected treasurer, and John J. McKetta, chairman of the Chemical Engineering department, University of Texas, was elected vice president. F. J. Van Antwerpen of Nutley, N.J., was reelected secretary.

DIRECTOR NAMED

LOS ANGELES—Earle M. Jorgensen, president and chairman of Earle M. Jorgensen Co. of Los Angeles, has been elected to the board of directors of American Potash & Chemical Corp.

New Production Manager

WEST CALDWELL, N.J. — Rockland Chemical Co. of West Caldwell, has announced two new appointments.

Stuart M. McCabe, Edison, N.J., will be chemical plant production manager. He has been in production work since 1945.

Jay A. Hammond, Augusta, N.J., will be sales representative for New Jersey for both Rockland's farm and garden lines.

Construction Begins

KAMIAH, IDAHO — Don Sowa, manager of Twin Feathers Mills, Inc., of this city, a division of Potlatch Forests, announces construction has started on a plant to manufacture a new fertilizer product developed by the Potlatch research department.

The plant is expected to begin production some time in December, Mr. Sowa said.

These men
guard
the quality
of your
fertilizer chemicals
from U.S.I.

BOB
DEITZRAY
KOLBESON

Many U.S.I. customers in the fertilizer industry know Bob Deitz and Ray Kolbeson. As chief and assistant chief chemists at our Tuscola, Ill., Plant Laboratory, their imprint is on each tank truck and car of U.S.I. fertilizer chemicals — ammonia, nitrogen solutions, sulfuric acid and phosphoric acid — shipped from Tuscola. They head a team responsible for the quality of all fertilizer chemicals made at Tuscola.

Yet these chemists do much more than simply provide the customer with an analysis of each shipment. They inspect plant production continually to help maintain the consistent quality customers require. And the analytical knowledge possessed by Bob, Ray and their colleagues is at the disposal of U.S.I. customers for all sorts of problems.

For example, they will perform special analyses for trace materials or uncommon constituents . . . will provide both standard and special test procedures. They have helped newcomers to the fertilizer business set up labs by providing advice on equipment, procedures, personnel. And they have carried out check analyses with customer labs.

Both men bring wide experience in the field to their jobs. Bob has been an industrial chemist for 20 years—three of them as a referee analyst in inorganic chemistry. He is now a member of the National Plant Food Institute's Task Force for Liquid Fertilizers. Ray numbers 12 years as a research and industrial chemist.

These men work for you as well as for us. A call to U.S.I. Heavy Chemical Sales in New York — OXford 7-0700 — can put them at your service.



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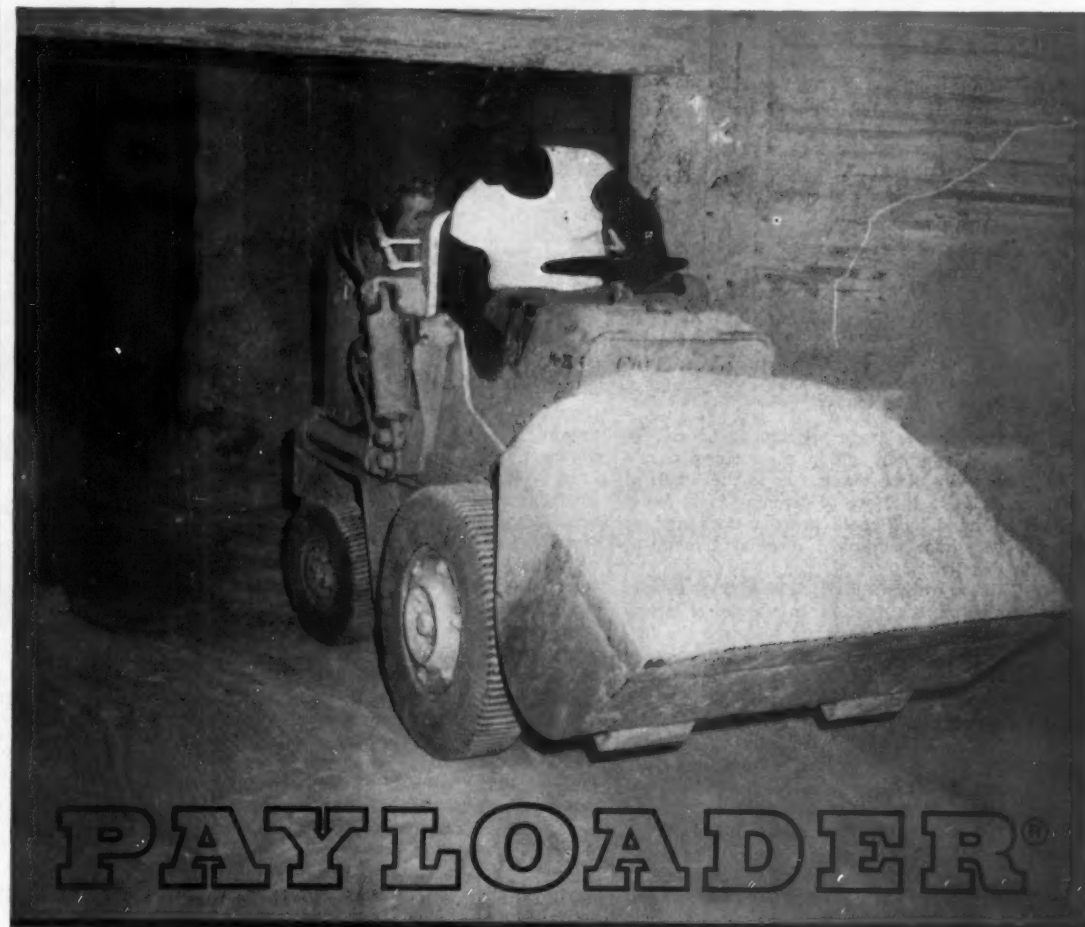
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A BUSINESS PAPER FOR THE FARM CHEMICAL INDUSTRY

Teamster Union Voted in By Phosphate Workers

ENTRANCE of the Teamsters Union into a field formerly regarded as the private hunting ground of the Chemical Workers Union, adds a new and perhaps ominous dimension to the labor picture in the agricultural chemical manufacturing field. Employees of the phosphate operations of Virginia-Carolina Chemical Corp. at Bartow, Fla., on Dec. 3, voted 348 to 273 to have the Teamsters represent them.

It was a run-off election set up by the National Labor Relations Board, wherein the vote was to be either for the Teamsters Union or for no union at all. That the count was close is of some significance, but the fact remains that the Teamsters are now in the saddle at this Florida location.

The rest of the trade will watch closely the results of this new affiliation. Will it result in a strike, just to give the TU an opportunity to flex its muscles? V-C officials had previously voiced the opinion that if their workers should vote in the Teamsters, a strike would possibly result. As of this writing none has come, but the situation appears to be touchy.

Reaction in the trade appears to be one of wonderment why any group of working people would blissfully place themselves in the hands of Jimmy Hoffa in the face of damning facts found on every hand by Senate investigations and as seen in the known criminal records of many of the union officials.

V-C did a workmanlike job of giving its men the facts before the election. In a series of letters to the employees, the company reviewed the history of the Hoffa union in the light of Senate testimony, declaring that the men would be better off to vote against such an association. The larger portion of workers, however, remained apparently unconvinced.

Having thus gained a foot-in-the-door victory at Bartow, the Teamsters are likely now to concentrate their attacks elsewhere to oust current unions and gain more dues-paying members for their own use. It is a situation which every manufacturer in the trade might well watch carefully and take any steps necessary to head off such an invasion.

The TU victory at Bartow was far from being a "mandate," as such things go, and V-C has pledged to its men: "There will be no discrimination, either for or against any employee, by virtue of his being a member, or not being a member, of the union. Membership in a union is not a condition of employment or enjoyment of full benefits at V-C."

But the fact remains that the Teamsters are here; they are exerting maximum pressure to influence chemical workers to their way of thinking; and they are not likely to sit back in smugness and benevolence at the squeak victory they gained at V-C.

Accidents Never Take a Holiday . . . Keep on Guard!

THAT eternal vigilance is still the price of safety in manufacturing plants has been underlined recently by two unfortunate accidents resulting in three deaths and injuries to others. These events, reported in this issue of Croplife, could have been avoided when one looks back on the situations. The strange part of it is, however,

that similar procedures still go on in other plants around the country, inviting additional accidents.

In one case, a crew was using a cutting torch on an old pipe once used to carry ammonia. An explosion ensued, killing two workmen and injuring a half-dozen others.

Much has been said and written about the hazards of subjecting old ammonia pipes to the extreme heat of a welder's flame, yet here is a case where such admonitions went unheeded and disaster resulted. Such an event, happening in a plant where good safety practices are usually observed, points up an apparent lack of information getting down to the fellows on the job in the plant.

Practically all plant superintendents are aware of hazards involved in applying heat to ammonia-containing pipes and vessels, yet it would appear that the men doing the actual job either did not know the danger or failed to heed warnings.

It is interesting at this point to note that the labor commissioner of the state where the plant is located, gives the plant itself a clean bill of health. In reply to a demand from the union that the state "look into dangerous conditions" at the plant, the commissioner said that the facility had been inspected in all phases of operation and was found to be "in very good condition" from a safety standpoint.

If the plant is being operated in a safe manner, then how can fatal accidents occur? It would appear that this is a case where the victims were not engaging in normal activities involved in fertilizer production. Cutting pipes and welding, although commonly done in plants, is not part of actual manufacturing. Thus, safety rules sometimes fail to stretch far enough to cover fringe activities which can be as hazardous, or more so, than the jobs involved in manufacturing as such.

The other unfortunate accident involved the collapse of a face of stored material which caught a man in the slide and killed him. The latter type of accident is all too common. A vertical, or nearly vertical, wall of stored material is never stable and can come crashing down at any time without warning.

Plant personnel, accustomed to risking life and limb working too closely to menacing overhangs, can become contemptuous of such conditions and can get the feeling that "It won't fall while I'm there." Perhaps it is easier to keep such piles at a lesser angle of repose than it is to convince workmen that they must stay away from those towering faces which can slide at any given moment.

Eternal vigilance is a need which can tolerate no moments of letting down the guard. Safety is more than devices and gear coverings and goggles and helmets. It is an attitude. You have to keep aware of it to make it work.



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INDUSTRY MEETINGS

Jan. 18-19—Pacific Northwest members of Western Agricultural Chemicals Assn., 8th annual meeting, Benson Hotel, Portland, Oregon.

Meeting Memo listed above is being listed in this department this week for the first time.

Jan. 4-6—Northeastern Weed Control Conference, 15th annual meeting, New Yorker Hotel, New York City.

Jan. 5-6—15th Annual Wisconsin Pesticide Conference with Industry, University of Wisconsin, Madison, Wis.

Jan. 5-6—Arkansas Plant Food Conference, Arkansas Plant Food Educational Society and University of Arkansas cooperators, Little Rock, Ark.

Jan. 5-7—Eleventh annual convention, Agricultural Aircraft Assn., Inc., Hotel El Dorado, Sacramento, Cal.

Jan. 6-7—Western Colorado Horticultural Society, Annual Meeting, Civic Auditorium, Grand Junction, Colo.

Jan. 10-11—Texas Annual Fertilizer Conference, Texas Plant Food Educational Society and Texas A&M cooperating, College Station, Texas.

Jan. 12—Clemson College Fertilizer Meeting for manufacturers, dealers and salesmen, Wade Hampton Hotel, Columbia, S.C.

Jan. 10-11—Annual Winter Meeting, Ohio Pesticide Institute, Nationwide Inn, Columbus, Ohio.

Jan. 11-13—Agricultural Ammonia Institute, 10th annual convention, Memphis, Tenn.

Jan. 11-13—1961 Beltwide Cotton Production - Mechanization Conference, Poinsett Hotel, Greenville, S.C.

Jan. 12-13—Arizona Aerial Applicators Assn. 8th annual conference, The Wigwam, Litchfield Park, Ariz.

Jan. 17—Annual meeting of Georgia Plant Food Educational Society, Continuing Education Center, Athens, Ga.

Jan. 17-18—Third annual Agricultural Pesticide Conference, Purdue Memorial Center, Purdue University, Lafayette, Ind.

Jan. 17-18—Arkansas Plant Food Conference, Arkansas Plant Food Educational Society and University of Arkansas cooperators, Little Rock, Ark.

Jan. 17-18—Annual meeting, Georgia Plant Food Educational Society, Georgia Center for Continuing Education, Athens, Ga.

Jan. 18-19—Eighth Annual Western Agricultural Chemicals Assn. Northwest Conference, Benson Hotel, Portland, Ore.

Jan. 18-20—14th Annual Southern Weed Conference, Hotel Soreno, St. Petersburg, Fla.

Jan. 19-20—14th annual Southern Farm Forum, Roosevelt Hotel, New Orleans, La.

Jan. 23-25—Southeastern Branch, Entomological Society of America,

35th annual meeting, Admiral Semmes Hotel, Mobile, Ala.

Jan. 23-27—Annual Purdue Pest Control Operators' Conference, Purdue Memorial Center, Lafayette, Ind.

Jan. 24—Discussion on current recommendations for the control of pests in Kentucky, Room 232, Agricultural Experiment Station, University of Kentucky, Lexington, Ky.

Jan. 25-26—Custom Spray Operators' Training School, 13th annual meeting, University of Illinois, Urbana.

Jan. 26-27—Colorado Agricultural Chemicals Assn., annual meeting, Cosmopolitan Hotel, Denver, Colo.

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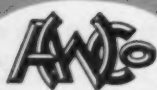
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